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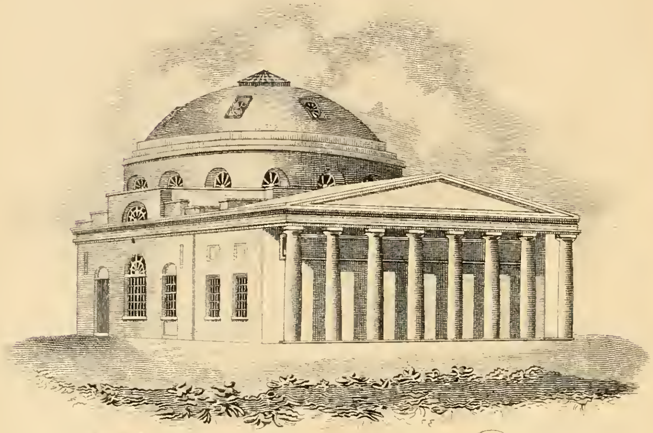

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BULLETIN
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MENTAL HYGIENE AND THE PUBLIC HEALTH

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May I first call your attention to those lines of thought and effort which have been most successfully pursued by the psychiatrist during the past twenty-five years in his attempts to better understand mental disease.

First, thorough study of the development of personality in the adult. It has been demonstrated that in that very large proportion of mental cases where no organic basis can be found, careful and detailed examination of the life history of the patient usually shows a defective development of personality which cripples him or handicaps him when he comes to meet the responsibilities of the adult. In other words, innumerable well studied cases have effectively demonstrated the fact that the soil in which the neuroses, the psychoneuroses and the psychoses later grow is prepared in childhood, adolescence and youth.

Case 1. A young man of normal intelligence was brought to the hospital at the age of twenty suffering from a serious psychosis. He had left home to take his first position, that of a bond salesman. His illness, which developed shortly thereafter, was attributed to his inability to stand the competition in a high pressure sales organization. That was doubtless the precipitating cause. Careful study of his personality as it developed from infancy and of his environment during those years, however, showed him to have been an almost unbelievably spoiled child, always given his own way, never having learned the meaning of competition or of how to lose gracefully, never having moved out of the range of influence of his family—a badly balanced, a warped personality, crippled when the time came to step out for himself. This was the basic cause.

Case 2. A young woman of twenty-six, intelligent, a highly efficient secretary, came to the hospital with a serious psychosis following a few days after her becoming engaged to a worthy young man. It was said that her illness was precipitated by her engagement to be married. That was doubtless true. Study of her life history, however, revealed that while she was regarded by most people as quite normal her family and intimate friends had recognized the growth of an excessive modesty from the age of puberty. She was abnormally sensitive to sexual topics—a prude. An attractive girl, as she grew older she developed and perfected in her teens a social technique which enabled her to successfully keep boys at arms length until the whirlwind courtship ending in her engagement which precipitated the psychosis. The basic etiological factor in this case, however, was not the engagement but is to be found in an incomplete personality development, a serious lack of social adaptability which crippled her effectively when brought face to face with a normal adult problem.

These illustrations must suffice.

Second, it follows naturally that the attention of the psychiatrist should have been directed to the study of the unusual or peculiar child who might later be presumed to contribute largely to the ranks of the mentally ill. Interest was stimulated by the results of surveys which were made of school children in various parts of the country, in both country and urban districts. It was found that 6 per cent of school children were mentally handicapped. A little over half of these were normally intelligent but were in some way peculiar. The others were to varied degrees defective, that is, intellectually inferior. Largely through the financial backing of large foundations whose interest became aroused, child guidance clinics and institutes for the study of the problem child and the juvenile delinquent were established. Special psychiatric attention was also given to the cases coming before the juvenile courts. As a result of more than ten years of this clinical effort and research it seems to be definitely established that given the intelligent coöperation of parents, teachers, social workers and others interested in the healthy training of children the peculiarities, the abnormal behavior of such children may be corrected and reasonable assurance given of a continued sound personality development.

Case 3. A highly intelligent boy of eleven was brought to the psychiatrist by his parents. They stated that within a period of three months their son had shown a complete change of character. Formerly quiet, studious, obedient, he had become loud, profane, abusive of his younger brother and generally disobedient and incorrigible. Close inquiry revealed that for the five years preceding he had been living with his father and mother in an isolated community in a foreign country where he had no playmates of his own age. Most of his energy was given to study under his mother's direction. On his return to this country he was placed in a large private boys' school where it was found that from the point of view of his studies he belonged and was placed in the class of fourteen or fifteen year olds. In the classroom he did well enough. Socially, emotionally and physically on the playground he was at great disadvantage. He felt his inferiority keenly. He did his best to imitate his fellows and his home behavior was clearly explained on that basis. His parents were stiff and unbending and disciplined him unwisely, but they were intelligent enough to understand their own limitations and coöperated willingly in transferring him to a smaller boarding school, the head master of which was personally interested in the problems of the growing boy. There he did well. An actually dangerous crisis in the growing-up of this boy was averted.

The third important line of thought and effort, and the last to which I will refer, which has engaged the attention of psychiatry in recent years, has been based on the theories of Sigmund Freud and the work of the psychoanalytic school which he founded. From this source has come suggestions of inestimable value as to the development of the instinctive and emotional life of the individual and insight into the reasons for his normal and abnormal behavior. Psychiatry has felt and has been deeply influenced by the work of this clinical and research group. May I pause before proceeding to discuss what the influence of these major lines of psychiatric effort on the main body of medical thought and action is to be?

Child welfare is a subject very close to the hearts of our people. The idea that the not very seriously considered temperamental peculiarities and odd behavior of some children were of real significance; that those bad habits, odd traits, peculiar behavior should receive intelligent attention in order that the boy or girl should grow up to be a normal man or woman well equipped to meet adult problems, made a deep appeal to the thoughtful members of every community. That that appeal was strengthened greatly by the mounting evidence put out by the psychiatrist that mental disease in the adult very frequently had its roots in abnormal behavior in childhood and adolescence, there is no doubt. At any rate a wave of intense interest in child training and education swept the country, affecting particularly parents, educators, and all others interested in the wholesome development of youth. That wave has not receded. It is to be hoped it never will. It has had far reaching results. There has been, of course, in the past twelve or fourteen years a great deal of misguided enthusiasm and superficial speech and action. Insufficiently trained and over-enthusiastic physicians talked loosely before large lay audiences of psychoanalysis and what had been and might be accomplished thereby. Promises were made as to results to be gained by the establishment of mental hygiene and child guidance clinics which had no possible hope of fulfillment within several generations. Lay writers wrote knowingly in the popular magazines of psychoanalysis and the vocabularies of boys and girls who read them were enriched by such words and phrases as "sublimation," "repression," "Oedipus complex," "the unconscious mother attachment," etc. Writers of popular fiction exploited the psychopathic individual and personality analysis or dissection, with the help of the new vocabulary, became an indoor sport.

But this was a phase which is now rapidly disappearing. I believe that actually much good has been accomplished by the arousing of popular interest in the modern trends of psychiatry. Certain barriers of superstition have been broken down. *Fear* of mental disease has become less terrible as *facts* as to causation have become known. We fear most that which we cannot see. Further, the knowledge of the intelligent public accentuates the challenge to the medical profession. The intelligent layman is in a receptive mood. Without any great stimulation or help from the medical profession parent teacher associations have been formed throughout the country to consider the proper training and education of the child and the dangers to which he is subjected during his formative years. Educators have been aroused to new conceptions of the duty of the teacher and the school organization to the student. Specifically they acknowledge their share of responsibility for sound, well balanced development of personality. Evidence of this is found in school systems where special classes have been formed for the defective pupil and other special classes for the normally intelligent but otherwise unstable student. More than a score of our great universities have introduced departments of mental hygiene into their organizations for the benefit of student and faculty, and find such departments invaluable. Social workers serving various types of organizations seek instruction in the mental hygiene point of view. The clergy of every creed ask enlightenment as to the newly found reasons for emotional difficulties. The interests of the psychologist have broadened, as have those of the criminologist and penologist.

What is needed is medical leadership. In this, the greatest problem of all in the field of preventive medicine, parents, teachers, social workers, social scientists, all concerned with the sound development of youth, will necessarily have much to do, but the directing force must come from the medical profession. It is a public health problem.

For medical leadership we are dependent on the medical schools. The medical schools of this country have been slow to recognize and meet their responsibilities in the field of mental hygiene. We must admit that there is today an appalling lack of good psychiatric teachers, of adequately trained directors for psychiatric clinics and out-patient departments. I do not decry the advances made. In a considerable number of schools it has been remarkable. But until there is a further change in the general attitude of the medical schools as to what constitutes well rounded undergraduate medical education progress toward the development of leadership in the mental disease aspect of preventive medicine will continue to be slow.

It is hardly necessary to repeat what has so many times been said, that the medical education and training of most physicians of today has emphasized the diseases of organs, has concerned itself chiefly with organic integration and behavior under normal and adverse circumstance, and has given comparatively little consideration to the individual as a whole—*his* behavior in a complex society, *his* reactions to the stresses and strains that confront him as a human being. Yet the two are inextricably involved. "Mind is the human being in action" (the *total* human being).

The report of a recent survey of psychiatric teaching facilities in sixty medical schools under the auspices of the Division of Psychiatric Education of the National Committee for Mental Hygiene reveals the following criticism by deans, professors of medicine and professors of pediatrics.

The isolation of the subject—that is the lack of integration with other departments of medicine; inadequate personnel; varying terminology; inexactness; therapeutic inefficiency.

Progress is being made, I am glad to say, in the matter of better integration with other subjects of the curriculum. Psychiatrists have been working on surgical, medical and pediatric wards and psychiatry has been taught from the patients on medical wards in certain schools. In this connection it is interesting to note the statements of professors of medicine in the schools surveyed as to the incidence of psychiatric problems (mostly psychoneuroses) among their cases. The estimate ran from 2 to 75 per cent, with an average of 35 per cent.

The estimate of the professors of pediatrics ranged from 10 to 70 per cent, with an average of 30 per cent.

Quality of teaching and the personalities of teachers are of more importance than a large number of curricular hours. Actual number of teaching hours and the detailed treatment of the subject must vary to some extent with the school and the teacher, but if the student at graduation is to have a comprehension of the importance of consideration of the total individual, his behavior as a whole, his reactions as an individual to the stresses of life, then the teaching of medical psychology and psychiatry must be carried on from the freshman through the senior years.

In the freshman year, with the study of normal tissues (anatomy, histology, physiology), attention should be paid to the development of normal personality and the significance of the forces that give it form. We deal here with the integrated personality.

In the second year, along with the study of diseased tissues (pathology, bacteriology, etc.), the forces which make for the disintegration of personality should be considered with the mechanisms involved.

In the clinical years (third and fourth) the main reaction types of mental disease should be presented to the student with special attention to the so-called minor mental abnormal states which so frequently are met with by the internist, the surgeon and the pediatrician. In the final year opportunity should be given the student to actually deal with the mental patient, to study the significance of his life history in detail and to examine mentally a certain number of patients, perhaps six. The latter should be required.

If, after general hospital experience, the young physician wishes to enter the field of psychiatry he has ahead of him further extensive post-graduate work, but on graduation he will have acquired certain information and an attitude toward all his patients which every physician and surgeon should have.

He will have the knowledge that no special attitude is required in dealing with the mental patient. His attitude should be that with which he approaches all patients—a simple sincerity of purpose to determine what the trouble is and to correct that trouble if possible. He will have learned for his purpose to put out of mind technical names and confusing psychiatric jargon and to regard his patient as a human being confronted by a difficulty in adaptation to something concrete which he should try to discover. He will have learned that the patient frequently, through his physical symptoms, is expressing his inability to adjust to definite problems, which may lie in his business life, in his domestic relations, in his social experiences or represent the residuals of past experiences. He will know that palpitation, shortness of breath, precordial pain, fainting attacks, hypertension *may* be due to certain emotional reactions of the patient to special life situations; or that nausea and vomiting may be due to a "reaction of disgust to some external situation" or that diarrhœa and constipation "may involve factors other than the position, secretion and motility of the viscera"; also that the sleeplessness of the neurotic may be treated in other ways than by drugs.

He will have learned not to dismiss such physical symptoms lightly, saying that it is "just imagination" or "there is nothing wrong," but will know how to avoid the words "mental" and "nervous" and speak of "emotions, instincts and personal factors." He will listen respectfully and give attention, knowing the value to the neurotic patient of talking out his troubles and of the friendly and sympathetic attitude of the physician. Nor will he be dogmatic, critical or freely interpretive, but he will be cautious and reserved, not trying to force on the patient an outlook on life based on his own experience and conclusions but trying to look at life from the patient's point of view. "The world of each of us bears the stamp of our own personality, our native endowment, our personal experiences and our cultural beliefs" (1). The same with the patient. And he will have learned the need of the neurotic patient for work, routine or creative. Finally confronted by a problem beyond him the physician in his reference of the patient will at least protect him from the charlatan.

It is through the development of such physicians with a broad understanding of what may underlie the behavior of people and a knowledge of the importance of sound personality development from infancy to adult years that we may gain leadership in our various communities in the grave problem of prevention in the mental field. It is usually the general practitioner, the obstetrician and the pediatrician who first come in contact with the mental case. These physicians occupy a strategic position in their relation to the family. Trained to be observant, they have the opportunity to quickly recognize the existence and often the source of family strain and its influence on the children of the family.

It is worth while to refer to the very conservative judgments of the child guidance clinics as to their results thus far, based on recent follow-up studies of their former patients. The clinics referred to are those of long standing (twelve to fourteen years) specially equipped and manned whose work has offered an invaluable contribution to clinical research. Their estimates vary from 65 per cent to 75 per cent of their cases which have shown either improvement or completely satisfactory results; this in a most complicated field of treatment where not only the individual himself but the influences in his environment must be studied and adjustment made between the two. The clinic endeavors to remedy physical, mental and social problems involved.

It does not attempt to do *all* the work itself but rather tries to bring to bear all community resources—medical, psychological, educational, recreational, social, legal—which may be needed to straighten out the situation.

To repeat, the guiding principle is to treat the individual child and his environment with the end of establishing comfortable adjustment between them.

The parents are usually the most important elements in the child's environment, therefore the problem of parental guidance is very often to the fore. The unstable, oversolicitous, neurotic, unhappy, delinquent, alcoholic, rigid, neglectful parents—to speak of a few of the types—create much insecurity, frustration, timidity, rebellion and acceptance of poor standards of behavior and social adjustment for their unfortunate offspring.

But the establishment of such clinics as I have referred to and their maintenance is an expensive business and in these days quite impossible for most communities. What can be done is to make use of existing facilities and in many states it would seem that the state departments of health with the local health officers might give valuable coöperation.

I realize, of course, that state departments of health vary in their organization and methods of functioning. In Maryland the children's division of the State department of health has inaugurated, with the help of the psychiatrists of the state, a modest number of clinical conferences for the benefit of children with the health officers, public health nurses, teachers, parents, etc., in various counties of the state. Two state hospitals, one private hospital and one psychiatric division of a general hospital, one mental hygiene clinic and various individual psychiatrists are contributing to the success of the plan.

It is interesting to note that this action originated in the department of health itself, was requested by the department and was not the result of the effort of any crusading group. There is a real eagerness on the part of the local health officers and public health nurses to acquire the mental hygiene point of view for the benefit of handicapped children in country as well as urban districts.

In large cities where facilities are available there is that same eagerness on the part of the social workers of welfare organizations who have as part of their responsibilities at least the care and rehabilitation of youngsters.

No thoughtful person wants to claim too much for any method of attempting to prevent mental disease. Mental disease incident to syphilis, alcohol and drugs may be combatted in part through social measures. Mental disease due to other organic causes may be prevented as preventive medicine develops to deal with them. But as to the types of mental disease that make up more than 50 per cent of our admissions to mental hospitals, for which we know no organic cause, the facts at our disposal today indicate that prevention depends on the very earliest recognition and treatment of peculiarities of personality and behavior. These peculiarities are to be found in childhood, adolescence and youth.

I have no love for statistics and put no great trust in them, but to bring home and keep before us a conception of the magnitude of mental disease as a public health problem it is well to repeat and repeat again certain simple figures.

There are about 300,000 patients in the *mental hospitals* of our country with 75,000 admissions a year. There are more hospital beds for mental patients than there are hospital beds for the physically sick, and this includes special hospitals such as those for tuberculosis, as well as all general hospitals.

In 1928 one person for each 325 of our population was in an institution for nervous and mental disease, if we include those for mental deficiency and epilepsy. This ratio is 7.5 per cent higher than that for tuberculosis.

It is believed that one half of the 15,000 actual suicides and 35,000 attempted suicides in this country each year represent preventable types of mental disorder.

In allied fields dealing with social maladjustments in the form of despondency, delinquency and crime, the statistics are even more appalling. Dr. Franklin Ebaugh in his presidential address before the Central Neuropsychiatric Association in 1930 remarked that the incidence of mental disease would indicate that one million of the young people then in college would at some time in their lives become patients in mental hospitals. That is a dramatic way of putting it. At any rate these statements of statistical fact help us to visualize the problem.

Attempts at prevention will inevitably fail unless we have as a basis facts as to cause.

For attack on this great problem in preventive medicine we have in recent years found etiological facts on which our attack may be based. Already a remarkable public interest has been developed and fine effort put forth. In the success that will slowly but surely finally come many groups will have a part—educational institutions, from the nursery school to the college, teachers, parents, the clergy, the social scientists who will, I believe, make a great contribution.

The ultimate leadership, however, in this whole field of integrated study, which aims to help the individual adjust himself to his environmental demands, must be medical. We must earnestly address ourselves to the development of such leadership.

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SURGERY OF THE BILIARY APPARATUS[1]

By ARTHUR M. SHIPLEY, M.D.

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Very great advances have been made in the diagnosis and surgical treatment of diseases of the biliary tract. The number of operations has increased and there is a very large literature covering every phase of the subject. Yet in spite of this there are few other fields of surgical endeavor, with the exception of cancer, where there are so many operative failures. The mortality following operations on the gallbladder and bile ducts is not high but the morbidity is disturbing.

A very considerable number of persons come to second or third, or even fourth operation, and many patients, who seemingly have a good operative result, still complain of the same symptoms that troubled them before surgery was undertaken. Is the wrong operation done, or, is the operation poorly done, or do we undertake to cure by surgical means conditions that are beyond such relief? Certain it is that many patients return for further treatment, and the reports from different clinics reveal a large number of such cases.

Following cholecystotomy or cholecystectomy, secondary operations are required for the following reasons—persistent cholecystitis, pancreatitis, hepatitis or cholangeitis, overlooked or reformed stones, biliary fistula, adhesions, traumatic stricture of hepatic or common ducts, or inadequate drainage.

There are many operative difficulties due to unusual anatomical arrangements; there are mistaken diagnoses, faulty preparation, and poor operative technique, but the chief cause of unsatisfactory results is delay in operation until serious damage is done to liver or ducts, or to neighboring structures.

The progress made in the surgery of the bile duct apparatus is one of the great triumphs of operative therapeutics, and the story of this advance is a fascinating one but time does not permit a discussion of the history of this progress. Likewise some understanding of the embryology of these structures is advantageous, but again time does not allow of our entrance into this field.

But it is essential that we pause long enough to consider some features of the anatomy and physiology of the bile duct apparatus and its relationship, both as to location and function, to surrounding structures. Under normal circumstances the gallbladder and ducts are not difficult of approach, but these structures are in close proximity to other tissues that make it incumbent upon the surgeon to be entirely familiar with the anatomy of this region and to proceed with care and caution when operating. There are very few operative fields where roughness and haste are so disastrous.

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[1] Read before the Tri-City Medical Association, Norwich, Conn., December 6, 1934.

The gallbladder is very constant in position except that it varies in thin, tall individuals compared with those of a short and stout build. In the former it is apt to be low and medial, in the latter, high and lateral. Then again the gallbladder varies widely in its degree of attachment to the liver. In this regard there are four types, and cholecystectomy is easy or difficult, in the absence of adhesions, depending upon the relationship of the gallbladder to the liver. Rarely the gallbladder is entirely surrounded by liver substance except for the cystic duct. This makes for a bloody and tedious dissection followed by considerable bile leakage from the raw liver surface. At the other extreme, the gallbladder may be nowhere adherent to the liver, but is free except for its attachment to the right edge of the hepato-duodenal ligament by means of the cystic artery and cystic duct. Such a gallbladder may become torted. I have operated on one such case and in reporting this condition in May 1927, found 22 cases in the literature. Usually the gallbladder has about two-thirds of its circumference covered by peritoneum and one-third intimately attached to the capsule of the liver. In a smaller group the gallbladder is attached to the liver throughout its length by a mesentery in which are found the branches of the cystic artery before they enter the walls of the gallbladder.

In removing the non-adherent gallbladder there are two especial anxieties that are the result of variations in anatomy. The first has to do with the cystic artery. Ordinarily it is lateral to the cystic duct, that is, between the duct and the liver, and covered by a sort of mesentery. It passes behind the right hepatic duct in its course from the right hepatic artery. But, this artery is not constant in its position; it may enter the walls of the gallbladder medial to the cystic duct and, because the artery is always covered by peritoneum and connective tissue, it is usually not seen until it is uncovered. Instead of passing behind, the cystic artery may pass in front of some portion of the biliary tract. If the cystic artery be cut before it is clamped it may retract, and, in attempting to secure it and afterward to ligate it, injury to the hepatic or common duct is likely.

The course of the cystic duct varies also. It may pass directly into the hepatic duct a short distance from the bottom of the gallbladder, or it may parallel the hepatic duct for some distance before joining it. This variation is confusing and may lead to the belief that an impacted stone in the cystic duct is in the common duct. The most common serious mishap in operations on the bile duct apparatus is injury to the hepatic or common ducts done while ligating either the cystic artery or cystic duct, and the above variations in anatomical relationship explain the likelihood of this accident. Sometimes there is an accessory hepatic duct that enters the gallbladder, usually between the folds of the peritoneum that attach the gallbladder to the liver. Such a duct may be cut and overlooked and there may be variations in the level of division of the cystic artery or an accessory artery. These variations may not be seen until such a vessel is severed.

In the diagnosis and treatment of diseases of the biliary ducts a number of surrounding structures must be constantly borne in mind. The pancreas and duodenum may enter into the problem and for several reasons. The common bile duct is divided anatomically into four parts, not because of any change in the duct itself, but because of its relation to these two structures. The first portion lies between the junction of the cystic and hepatic ducts and the lateral margin of the first portion of the duodenum. This is the uncovered portion of the common duct and varies in length, depending upon the point of juncture of the cystic duct with the hepatic, and the position of the first portion of the duodenum. This portion of the duct is in the right edge of the gastro-hepatic omentum if one uses the old nomenclature, or in the hepato-duodenal ligament if one uses the new. The essential thing, however, is not the nomenclature but the actual facts, and the important fact is the relationship of the common duct to other structures that it is highly important not to injure. The hepatic artery running from left to right is medial to the duct and the portal vein in its course toward the under surface of the liver is dorsal to the duct. The vena cava is not in contact with the common duct on this level.

This portion of the common duct is the site of election if it is to be incised, and in most instances stones in the lower portion of the duct can be dislodged and pushed back to this point before opening the duct, or, by the use of suitable instruments, stones may be dislodged after the duct is open. The exception to this statement is a large stone impacted in the diverticulum of Vater. Here it may be necessary to open the anterior wall of the first portion of the duodenum and remove the stone through the intraduodenal portion of the duct. This procedure is rarely necessary.

The liver is the largest gland in the body. The biliary duct apparatus, which is of such concern to the surgeon, is divided into two portions, that within the liver, and the extrahepatic part. The intrahepatic part of this system is made up of an intricate network of small tubules, which unite to form the right and left hepatic ducts. That portion of each hepatic duct that lies outside of the liver varies between three-quarters and one inch in length. These ducts joint to form the hepatic duct which is joined by the cystic duct to form the common duct.

Our concern in operative surgery may be with any of these extra-hepatic structures, either the right or left hepatic duct, the hepatic duct, the gallbladder and cystic duct, or the common bile duct. Of these structures the gallbladder concerns us chiefly, because it is most often in need of operative relief. It is composed of a fundus, body and neck. It lies in intimate contact with the dorsal inferior surface of the right lobe of the liver. Its relationships are most important because, when diseased, it is usually adherent. Medially it is in intimate contact with the second portion of the duodenum. This fact is the cause of a chief operative anxiety in all operations on the gallbladder—injury to the duodenum. This anxiety is still further increased because sometimes there is a fistulous opening between the gallbladder and the duodenum, and when the two hollow viscera are separated an opening is found in the duodenum, which defect, with indurated and thickened edges, is difficult of closure. If closure is not secure a duodenal fistula results with an irritating and destructive discharge, and if the fistula is a large one, dehydration and starvation are imminent.

The gallbladder is in close contact with the hepatic flexure of the colon and the same risks are present here as with the duodenum, but with this advantage,—the colon is mobile, easily approached, has a large lumen, and, if an opening in it is recognized, it is easily closed, and the site of the suture may be safeguarded by stitching over it some portion of the omentum. Occasionally coils of small intestine are in contact with the gallbladder. Usually, however, colon and omentum are interposed between the gallbladder and small intestine. This is the mechanism that usually seals off the infected gallbladder, thereby limiting the peritoneal involvement to the immediate neighborhood of this structure.

One of the chief difficulties in gallbladder surgery is Hartmann's pouch, which is not always present but very commonly so. It is a dilatation of the neck of the gallbladder. This pouch lies against the right edge of the hepato-duodenal ligament and when the gallbladder is inflamed, Hartmann's pouch may become adherent to the common duct. This may cause symptoms of common duct obstruction, and at operation, injury to the common duct is likely unless great care be used in freeing the neck of the gallbladder before ligating the cystic duct.

Another difficulty is brought about by the presence of lymph nodes close to the biliary tract. These nodes are very often enlarged and their resemblance on palpation to calculi is confusing and disturbing. If a large lymph node is firmly adherent it may cause obstruction by pressure. About forty years ago, the late Dr. Thomas A. Ashby operated on a young woman because of rapidly recurring ascites with jaundice. He found and removed a calcified lymph node obstructing both the portal vein and common bile duct. This patient recovered promptly and has remained well. She is now nearly seventy.

It is necessary to keep the pancreas constantly in mind in dealing with the problems of biliary tract surgery. The third portion of the common duct either lies in a groove on the dorsal surface of the head of the pancreas, or, as is more often the case, is entirely surrounded by pancreatic tissue. Therefore, any condition of the head of the pancreas that increases the amount of pressure upon the thin-walled duct will bring about the symptoms of obstructive jaundice, and there are two conditions of the pancreas that often cause this pressure—carcinoma and infection.

There are two very narrow places in the biliary tract, one is the end of the cystic duct where it joins the hepatic, and the other is the opening of the common bile duct into the duodenum. Stones, therefore, pass through these narrow places with difficulty and large stones do not pass. Infection, with the resultant swelling, still further narrows these openings and the flow of the bile is slowed. If the biliary tract is infected, with or without stone, drainage is lessened.

When the liver is entirely removed from dogs there is a rapid and progressive fall in blood sugar and the animal presents the clinical picture of hypoglycaemia followed by coma and death. The glycogen in the muscles is not used. It would appear that the liver possesses the mechanism that regulates the blood sugar. There is also a progressive rise in the amount of bile pigment in the blood.

After complete hepatectomy the amount of urea in the blood, urine and tissues is sharply lessened until only a trace remains, so that it is evident that the liver is essential in the manufacture of urea from the products of protein metabolism in the blood and tissues.

In addition to the above, other functions are carried on by the liver; many toxic agents are lessened or removed and micro-organisms are eliminated. The presence of typhoid organisms in the gallbladder is well known. Foreign proteins are often more toxic when injected into the systemic circulation than when introduced directly into the portal vein. Any lowering in liver function lessens the amount of fibrinogen in the blood and slows clotting.

This brief résumé of the findings in dogs whose livers have been removed is given, because prognosis after operations on the biliary tract is influenced by the condition of the liver. Until recently estimates of liver function were very largely guesswork, but a hopeful advance has been made and the time is perhaps not far distant when relatively simple tests will give us as clear an index as to the state of the liver as we are now able to get of the kidney function or of the metabolic rate.

A most hopeful fact in bile duct surgery is the ability of the liver to regenerate its damaged tissues when the cause of such damage is removed. There is abundant experimental and clinical evidence that the liver is able to carry on its function sufficiently well to support life when badly injured by trauma or disease, and there is also proof enough to establish the truth that recovery is the rule rather than the exception. This explains the complete clinical recovery of so many patients after an operation that succeeds in removing the source of infection or obstruction that had been the cause of damage to the liver.

On the other hand it is most important to bear in mind the ease with which the liver is infected and the different avenues through which organisms reach this important gland. Many infections are ascending ones from the duodenum or pancreas; some are blood borne; the lymphatics are also a likely avenue and infection may be transmitted from neighboring tissues by continuity. In any given case it may be difficult to determine which avenue is at fault.

One of the points of discussion in gallbladder surgery is whether the infected gallbladder is the result of an infected liver or the cause of it. There is much evidence either way. Certain it is, however, that when infected gallbladders are removed at operation, at which time there is abundant optical evidence that the liver is enlarged and abnormal in appearance, supported by preoperative evidence of lessened liver function, the postoperative evidence shows a disappearance of all symptoms both of infection and disturbed function.

Jaundice is a very important fact in bile duct surgery. It may be present or absent; if present, it may be slight and not have very much prognostic significance. If there is a very acute cholecystitis there is usually some degree of cholangeitis with swelling of the mucous membrane and a moderate degree of obstructive jaundice. It is to be expected that this type of jaundice will promptly clear up when the gallbladder is removed or drained.

Jaundice is the presence of the coloring matter of the bile in the tissues of the body where it is deposited by the blood. Bile is made up of bilirubin, bile salts and cholesterol. The bile salts are useful in digestion and as cholagogues, but not much is known about where they are formed and how. There is little knowledge of cholesterol except that some gall stones are composed almost entirely of this substance. Bilirubin, however, is better understood. It is gotten from haemoglobin and is found normally in the blood. When the amount of bilirubin in the blood is increased five to tenfold jaundice is noticed. The evidence at present is that the reticulo-endothelial system, consisting of cells found rather widely in the body but especially in the bone marrow, lymph nodes, liver and spleen, contain the bilirubin-forming mechanism. It is here that the wornout red blood cells give up their pigment. Bilirubin, in circulating in the blood stream and in passing through the capillaries of the liver, undergoes certain changes on entering the biliary tract. The significance of the Van den Berg test is based on these changes.

Therefore, a satisfactory classification of jaundice is the clinical one made by McNee who divided jaundice into three groups—obstructive, toxic and haemolytic. Toxic jaundice is due to damage to the hepatic parenchyma and bilirubin is, therefore, not acted on fully and remains in the blood. In haemolytic jaundice there is a larger destruction of red blood cells than normal and an increase in bilirubin in the blood, so much so that some of the pigment is deposited in the tissues.

It is with obstructive jaundice that the surgeon is concerned in considering operation on the extrahepatic biliary tract, and it is most essential that he does not confuse these three types.

The conditions that cause both toxic and haemolytic jaundice do not enter the field of operations on the biliary tract, and operation rashly undertaken in the face of these diseases is to invite disaster. As to the relative frequency of these different types of jaundice Hartmann's report from the Mayo Clinic is instructive. "In 450 cases of jaundice in approximately 23 per cent the lesion was intrahepatic, in 7 per cent it was haemolytic and in the remaining 70 per cent obstructive lesions of the hepatic or common bile ducts were present. Carcinoma accounted for about 25 per cent of the cases; of these malignancy of the pancreas was the most common single cause, and carcinoma of the gallbladder and bile ducts taken together were about half as common; stones were responsible for about 20 per cent and stricture of the common or hepatic duct for 10 per cent." These figures, of course, do not include disease confined chiefly to the gallbladder, because here jaundice is either absent or so slight as not to be of prime importance.

The gallbladder may be the site of acute or chronic cholecystitis. It may contain calculi with or without symptoms, there may be hydrops due to an impacted stone in the cystic duct, or it may be distended with bile because of obstruction in the common duct. It may be contracted and thickened in association with chronic infections of the common duct. It may be acutely distended due to obstruction in the third portion of the common duct in acute pancreatitis. A gallbladder without attachment to the liver may become strangulated because of torsion; it may be lacerated, ruptured, perforated or torn away from the liver by trauma. Tumors may occur in the gallbladder.

Acute cholecystitis has a very varied pathology. The constant thing present is infection. Calculi may or may not be present; there may be a single stone, large or small, or many hundreds of small stones; one or more of these calculi may be encysted. The bile in the gallbladder will vary in color and thickness; it may be so heavily infected as to be purulent, and the walls of the gallbladder may be catarrhal, suppurative or necrotic.

In acute cholecystitis without stone a varied number of organisms may be recovered which may have reached the gallbladder in the bile from the liver, may have travelled upward from the duodenum or pancreas, or have reached the bladder by way of the lymphatics. Typhoid and undulant fever may leave behind a localized gallbladder infection, and often enough a very acute, oedematous, or even necrotic gallbladder will be seen. Streptococci of different strains, the staphylococcus, colon bacillus, pneumococcus or anaerobes may be present. Sometimes the infection is mixed. It is usually impossible to say what was the avenue of infection in a given case. Whatever the type of infection or the kind of change seen in the walls of the bladder or the contents of the vesicle, there will be seen in practically all instances varying degrees of pericholecystitis, with adhesions between the gallbladder and surrounding structures. The area of pericholecystitis and the extent and firmness of adhesions vary widely. The gallbladder is also markedly influenced by pathology within the common duct. If there are stones in the common duct, in most instances the gallbladder will be thick and contracted, and such a gallbladder may be densely adherent as well. If acute cholecystic infection be complicated by this chronic condition, a very serious problem confronts the operating surgeon.

Perforation of the gallbladder is not so common as perforation of the appendix, but perforation does occur and at times this complication is seen a short time after the onset of acute symptoms. This produces usually a localized peritonitis, as the colon, liver, duodenum and omentum have a tendency to seal off the rest of the peritoneal cavity. Recently I have seen three cases of perforated gallbladder in the early stages of acute cholecystitis.

Acute cholecystitis has a tendency toward subsidence. Most surgeons practice a short period of expectant treatment before operating and for a number of reasons. The patient is a better risk after the acute attack has subsided. Time is available for a careful study of the patient's condition, and these patients often require careful study because many of them are fat, past middle life and with a long record of improper living, as to eating, drinking and exercise. In many there are other serious disabilities having to do with defective liver and kidney function, and either arterial or cardiac disease. Diabetes is a serious complication. Many have very little respiratory reserve and it is an all too well known fact that very often the postoperative disaster is a respiratory one.

From the standpoint of symptoms there are two main groups. In one there is a history of nausea, dull pain and discomfort, some fever, some tenderness in the right upper quadrant and considerable muscle spasm. These symptoms will have been attributed very likely to indigestion and the patient will have experimented with different food combinations. There may be a history of many such attacks which subside under absence of food and quiet, until a more severe infection occurs which may shut off the cystic duct, or the walls of the gallbladder may before seriously damaged. In this type of acute cholecystitis there is no severe colic because there is at no time any impaction of stone in the neck or cystic duct, and it is not until severe cholecystitis occurs with pericholecystitis that the patient and at times his physician also begin to think of the gallbladder.

In the other group colic is the outstanding symptom,—severe cutting pain that is relieved usually by morphine. Very often in this group there will be many such attacks, which, when relieved, leave the patient fairly free of symptoms. When there is no impaction and no active infection there are few symptoms following the attacks. This state of affairs will go on until a stone becomes impacted or the gallbladder becomes acutely and seriously infected, at which time the whole clinical picture will take on a grave aspect. Fever, leucocyte count, pulse rate, tenderness, spasm and pain will keep pace with the pathology within the gallbladder, in the walls of the gallbladder and with the extent of the pericholecystitis.

It is difficult to decide on the proper treatment of acute cholecystitis as there is hardly any other structure in which so many different combinations as to local pathology and general body conditions exist. These varying circumstances should govern the time of operation, and when surgery is undertaken they should determine also the type of operation. Careful consideration of all these factors is most important. Not only does the condition of the gallbladder itself call for careful thought, but the findings in the neighboring common duct, in the pancreas, and in the liver must be considered. And, in addition to all of this, the extent and density of the adhesions binding the gallbladder to surrounding structures enter into the problem. If, because of pancreatic involvement or common duct pathology, jaundice and widespread infection is present, the treatment undertaken must be influenced by these factors. Ordinarily in acute cholecystitis with or without stones and without complications, cholecystectomy is the procedure of choice. If the pancreas is involved and jaundice present, cholecystectomy and drainage of the common duct is often done, although many surgeons will drain the gallbladder and remove it later if the patient is gravely ill. If the gallbladder is infected and there are stones in the common duct, cholecystectomy and drainage of the common duct after removal of calculi is indicated. Drainage of the common duct through the stump of the cystic duct is advocated, but it is not often easy to do. If the gallbladder is very thick and contracted its removal may be very difficult and here it is sometimes wise to split the gallbladder from the fundus to the cystic duct and excise the entire lining of it, leaving its outside walls which are sutured together in order to obliterate the lumen. In such a gallbladder the cystic duct is often not patent.

If the patient is very fat and the gallbladder and liver high up, and if there is a great deal of pericholecystitis with much oedema in the neighborhood of the ducts, and if the gallbladder is necrotic or perforated, it is sometimes good surgical practice to remove the greater portion of the gallbladder and close the stump of it around a soft rubber tube for drainage.

If the patient is a bad risk and if the pathology found necessitates a difficult and tedious dissection in order to perform cholecystectomy, then cholecystostomy is the safer procedure, but with experience more and more gallbladders will be removed, as cholecystostomy is often an incomplete operation.

When we use the term chronic cholecystitis we are not always speaking accurately, because chronic disease of the gallbladder is not always due to infection, or at least, patients who suffer the symptoms of chronic gallbladder disease and who are cured by cholecystectomy have not always had gallbladders in which infection can be demonstrated after removal. Many chronically diseased gallbladders are infected and there will be a history of repeated attacks of acute cholecystitis, but in many instances the gallbladder before removal shows no evidence of infection. There is no pericholecystitis and no thickening.

This group of patients presents the most uncertain and confusing phase of biliary duct surgery, and it is here that surgeons differ sharply in their beliefs and practice. There are many surgeons who do not remove a gallbladder unless there is evidence of disease at the time of operation. They are not influenced by symptoms but by evident pathology, but, there is abundant evidence that to ignore symptoms and depend entirely on gross pathology that can be seen or felt at operation will result in the leaving of this structure in the body only to have the symptoms recur and continue after operation.

There is no reasonable doubt that many patients who come to operation with the diagnosis of chronic cholecystic disease are cured after cholecystectomy even when there is no evidence of infection and very little evidence of disease. This is especially true in patients past middle life in whom for some reason there is malfunction of the biliary duct apparatus. Many of these patients are cured by cholecystectomy.

In the so-called "strawberry" gallbladder there is evidence of pathology in the bladder wall, but very little to support the belief that the changes are due to infection.

There are many patients, however, who come to operation for chronic cholecystitis whose gallbladders are infected. There may be found a wide variation in local pathology. The gallbladder may be thick and firmly adherent to the duodenum or colon, or bound in by omentum, and rarely a coil of small intestine may be adherent. Even if none of these adhesions are found the bladder may be adherent to the right edge of the hepato-duodenal ligament.

Such a gallbladder may have perforated into the liver, duodenum, small or large intestine, or into the common duct. In this group there is no uncertainty as to the presence of pathology or the indication for cholecystectomy. The difficulty is the technical one of removing the gallbladder without serious damage to surrounding structures and the repair of fistulous openings found at operation. There is probably no more difficult task in abdominal surgery than the safe removal of such a gallbladder and the most expert and best experienced surgeon will find his patience and skill taxed to the utmost.

Judd classifies chronic cholecystic disease under three heads. His interest in this subject and great experience in the operating room weigh heavily in support of his conception of just what may happen in this very confusing field. The three subdivisions are chronic infectious cholecystitis, chronic metabolic cholecystic disease, the so-called "strawberry" gallbladder and chronic cholecystic disease without obvious evidence of infection in the gallbladder. In the first two groups the operator's course is clear enough. Both of these gallbladders show evidence of disease that is demonstrable at operation and cholecystectomy is indicated. It is the third group that gives us so much concern. If the symptoms and findings before operation point clearly to cholecystic disease and, if no pathology is found in the neighboring structures, the better procedure is to remove the gallbladder. Failure to do so will be followed very often by return of symptoms and disappointment. In a certain percentage of such patients, however, cholecystectomy is not followed by cure and this experience has lead to uncertainty.

There are a number of factors that predispose to chronic cholecystic disease. It is much more common in women than men, and in women who have had repeated pregnancies. It is commonly seen in fat patients and after forty. Unwise habits of eating and lack of exercise are certainly definite predisposing factors. It is impossible, however, to say just how these conditions work together and there are many exceptions as to age, obesity, sex and sedentary habits causing chronic cholecystic disease.

We have noticed an interesting thing in the University Hospital in Baltimore. Twenty-five years ago we rarely saw gallbladder disease in negroes, either male or female, and there were long stretches of time without a single case of biliary duct disease in a colored man. In the last ten years this condition has changed. Negroes are gradually acquiring the bad habits of the whites. They often do not exercise enough to burn up their food and they are showing a tendency to obesity. Whatever the causative factors, disease of the biliary duct apparatus is on the increase among them.

There is much uncertainty and discussion as to just where the infection begins that reaches the gallbladder in chronic infection of this structure. Many surgeons believe there is a real relationship between chronic appendicitis and chronic infectious cholecystitis, and they further believe that the infection passes from the appendix to the liver by way of the portal vein and from the liver to gallbladder either through the lymphatics or in the bile. The bacteriology of gallbladder disease like almost all surgical bacteriology is in an unsatisfactory state. Cultures taken at the time of operation and run through the ordinary laboratory routine will often fail to show any growth. I have been struck with this fact in the report of smears taken from the abdomen of patients with unmistakable suppurative peritonitis. Many of these organisms are finicky as to their behavior in media. In order to grow them a great deal of special care is necessary as to culture material, time of transfer, temperature, etc. This has been shown in a number of clinics where an especially interested and trained man has worked on these problems of bacterial growth when the symptoms and pathological findings at operation point clearly to infection.

In the gallbladder different reports are gotten, depending on whether the culture is taken from the bile, the stones, or the walls of the gallbladder. The highest incidence of positive culture is gotten from the lymphatic node often found enlarged close to the cystic duct. All the evidence points to organisms being present in the walls of the gallbladder and this finding indicates the advantage of cholecystectomy over cholecystostomy.

The appearance of the gallbladder in chronic infectious cholecystitis varies widely. The determining factors are the duration of the infection, the kind of organism, the type of gallbladder, the amount of pericholecystitis and the density and extent of adhesions; the conditions of the pancreas, the presence or absence of obstructive jaundice, with or without stones, in the hepatic or common ducts, and the possible presence of fistulous openings between the gallbladder and neighboring structures. All of these factors are influenced by a previous operation on the gallbladder with or without biliary fistula. The condition of the mucous membrane will vary widely. If stones be present they will vary widely in shape, size and number, and may be free, encysted or impacted. Chronic empyema of the gallbladder may be found where there is little or no drainage through the cystic duct, or impaction of a stone in the cystic duct may be followed by hydrops in which instance the gallbladder may be very large and thick. These chronically inflamed gallbladders are not so likely to perforate as an acutely inflamed one, but the tendency to the formation of fistula is much greater.

There is the widest sort of variation as to the symptoms of chronic cholecystic disease. In many instances gall stones are found in the gallbladder at autopsy or during operation for some other malady, in patients who have had no symptoms whatever of biliary duct disease, and at the other extreme many individuals will suffer over a long period all the symptoms of chronic cholecystic disease whose gallbladder at operation is entirely normal in appearance, with an entirely negative bacteriology and no findings, gross or microscopic, by the pathologist, and yet, such a patient is often cured by cholecystectomy. Who is to make the diagnosis and determine the need and kind of operation,—the internist who deals with symptoms, signs and laboratory findings, the roentgenologist who reports on the presence or absence of radiable calculi and the various cholecystographic shadows; the pathologist and bacteriologist with their positive or negative findings, or the surgeon who must decide at the operating table what is to be done with this particular gallbladder? The answer is not easy, but is plain enough. All must work together toward a better understanding of the many conditions that make the problem difficult, and that is just the explanation of the very great progress that is being made in this field.

Ordinarily, from the standpoint of symptoms, chronic cholecystic disease falls in a number of groups. First, those with gall stone colic; here the diagnosis is not usually difficult and X-ray and functional tests will often confirm the clinical impression. Second, those with outstanding infection, with an enlarged, tender and painful gallbladder with evidence of pericholecystitis. These patients present somewhat the picture of acute cholecystitis, except that the symptoms are chronic in duration and are not so intense. Third, an indefinite group with chronic indigestion, without history of colic, and no palpable evidence of gallbladder disease except perhaps some tenderness on deep palpation and some muscle spasm. There is a history of discomfort after eating with gas formation. Cholecystography may be helpful but is often confusing when compared with the symptoms. If calculi are not radiable the roentgenologist is warranted only in making one of three statements: either the gallbladder is a normally functioning one or a poorly functioning one, or one that is non-functional. Liver function tests are not very helpful in cholecystic disease uncomplicated by either obstructive jaundice or intrahepatic disease.

There may be an associated infection of the hepatic and common ducts or of the liver. The liver will often appear abnormal in appearance at the time of operation, the edges are rounded, the color is unusual, and there may be thickening of the capsule in the neighborhood of the gallbladder. These findings may be present where there is no dilatation of the common duct, where the gallbladder is not contracted and where no stones are found in the hepatic or common ducts, and where the pancreas is apparently not involved. Many surgeons have been in the habit of hesitating when this picture presents itself and have been loath to remove the gallbladder for fear that biliary drainage might be indicated. More and more the evidence is accumulating that cholecystectomy is the best procedure when the above state of affairs is present.

It is only when there is evidence of obstructive jaundice due to carcinoma of the ducts or pancreas, or to chronic pancreatitis, or where there is either traumatic or congenital stricture of the common ducts that the gallbladder is required for a side-tracting operation in order to get the bile around the obstruction.

It may be unwise to attempt the removal of a very adherent and thickened and contracted gallbladder, because of the technical difficulty in the face of a poor operative risk, or there may be a fistulous opening between the gallbladder and duodenum which would be difficult or impossible to repair.

With these exceptions the accepted treatment, once the diagnosis of chronic cholecystic disease is established, is cholecystectomy; cholecystostomy is merely putting off cholecystectomy. The time and choice of operation and the prognosis are influenced by defective kidney function, by obstructive jaundice with defective liver function, but cardiac insufficiency, by age, obesity, and other factors, so that a most careful preparation for operation is wise in all cases of chronic gallbladder disease.

Benign tumors are rarely found in the gallbladder, with the exception of adenoma and papilloma. These are of interest because they may resemble stones in the cholecystogram and when found at operation the gallbladder should be removed because they may be precancerous.

Malignant tumors are more common. Carcinoma is the type of cancer that is usually seen. The incidence varies in different clinics. When compared to the total number of diseased gallbladders operated on in different services the percentage runs between 0.5 and 5 per cent. Malignancy of the gallbladder is almost never seen in the young. Most cases occur after fifty. The relationship between gall stones and malignancy is very definite, and carcinoma of the gallbladder is cited as a proof of irritation being one of the etiological factors in the development of cancer. The kinds of cancer that may be seen are adenocarcinoma, papillary carcinoma, squamous celled carcinoma and sarcoma. The last two are rare. The symptoms are not distinctive, but resemble the different groups of chronic cholecystic disease. In most instances a large part of the history has to do with the attacks of gall stone colic before cancer developed, and in a small group there are almost no symptoms until late, when pain in the gallbladder region leads to the discovery of a hard, irregular mass.

The outlook after operation is uniformly bad. Usually the liver will be invaded at the time of operation and even in those cases where no metastases are seen and where the gallbladder is removed with a portion of the liver, or where the liver adjacent to the gallbladder is subjected to some type of cauterization the outlook is not cheerful.

Injury to the gallbladder is rare but must be kept in mind. We have seen avulsion of the gallbladder with the cystic artery torn but duct intact, we have also seen the gallbladder penetrated by a stab or gun shot wound and have seen the gallbladder lacerated by a crushing injury. One very unique trauma was severance of the hepatic artery caused by the passage of a truck wheel across the upper abdomen of a child.

BULLETIN

OF THE

SCHOOL OF MEDICINE, UNIVERSITY OF MARYLAND

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THE BRESSLER FOUNDATION

The major portion of an estate estimated to be in the neighborhood of one million five hundred thousand dollars was left to the University of Maryland in the will of Dr. Frank C. Bressler.

The bequest will go to the board of trustees of the endowment funds for the express purpose of constructing a research laboratory, to be known as the Frank C. Bressler Research Laboratory.

As the writer understands the condition of the will, the fund will be held in trust for fifteen years to allow a sufficient interest to accrue for the purpose of accumulating enough money for the building of the laboratory. After the elapse of fifteen years the corpus of the endowment will be turned over to the trustees for management.

Dr. Bressler's munificient gift heartens those in control of the University's affairs and will encourage them to greater efforts than ever before. This is many, many times larger than any other bequest ever left the University and comes at a most opportune time. We sincerely hope that it marks the beginning of many more contributions to our endowment funds.

Dr. Bressler was a graduate of the College of Physicians and Surgeons of the class of 1885.

We would suggest when drawing up your wills that you remember your alma mater. All of the departments are sorely in need of money. Contributions may be made to the general medical fund, hospital, student loan, publication, library, professorship, etc. Do not hesitate because you cannot give a great sum for many mikles make a mukle and mighty oaks from small acorns grow.

The Bressler Foundation truly marks an epoch in the affairs of the Medical School of the University of Maryland and will be welcome news to our alumni wherever located in this broad land of ours.

CHARLES CARROLL HABLISTON

(1890–1935)

Dr. Charles Carroll Habliston died in the early morning of Thursday, January 17, 1935, after an illness of about four months. He had not been particularly well since an attack of pneumonia in February of 1934 and in the fall of the same year he was forced to discontinue his work because of his health and from that time until his death he was confined to his home. He was only forty-four years old and in what should have been the prime of his life.

He was born May 3, 1890, in Baltimore, son of the late Charles Carroll and Helen Josephine Habliston (née Wallace), and spent all of his life in this city. His education was obtained in the public schools of Baltimore and later he attended the Baltimore City College from which he was graduated. This was followed by his graduation from the Department of Pharmacy of the University of Maryland in 1910. He then entered the Medical School of the University of Maryland from which he was graduated in 1914.

His interneship was served at the Tuberculosis Hospital at Bay View from 1914 to 1917 and it was at this time that his acquaintance with Dr. Gordon Wilson began, which lasted throughout both of their lives and in the latter years became a very fast and firm friendship.

During the World War Dr. Habliston served as a lieutenant in the Medical Corps at Camp Meade, Maryland, from April 1918 to August 1919.

From the year 1919 until the time of his death he was active in the Medical School where he was interested both in the teaching of physical diagnosis and clinical work and lectures on diseases of the chest. At the time of his death he was Associate Professor of Medicine at the University of Maryland, Consulting Physician to St. Joseph's Hospital and Chief of the Tuberculosis Hospital at Bay View, Baltimore, Maryland.

He was also a member of the American Clinical and Climatological Association in which he took great interest.

He was married on September 17, 1921, to Sara Louise Sharp, who survives him. There are three children—Charles Carroll Habliston, Jr., Sallie Jo Habliston and Charlotte Habliston.

His contact with Dr. Gordon Wilson began immediately after his graduation from the Medical School in 1914 and in these early years he developed an intense interest in the subject of tuberculosis, which was followed throughout his career and it can be truthfully said that

Charles Carroll Habliston

he was a pioneer in Baltimore in the use of artificial pneumo-thorax in the treatment of pulmonary tuberculosis. His practice was almost confined to this type of work and in the latter years became very large. He was constantly being consulted on this subject because of his well known and great ability.

He was an excellent teacher, very forceful in his statements and well liked by the students.

It will be difficult to fill his place in the medical fraternity of Baltimore.

Those of us who knew him well appreciated his keen mind, his sterling qualities and his unfailing loyalty to his many friends. His optimism, happy disposition and practical philosophy of life were an inspiration to many of us and it is regrettable that these influences shall no longer be felt.

His end came too soon and many times we shall be lonely for this gentleman and physician.

THE ENDOWMENTS FUNDS

The Board of Trustees of the Endowment Funds reports for the fiscal year ending December 31, 1934, as follows:

	Invested	*Cash*	*Total*
L. S. Ashman Fund	—	$205.77	$205.77
Burt J. Asper Fund	—	292.37	292.37
Caroline Dorsey Coale Fund	$2,250.00	219.22	2,469.22
I. & C. Cohen Fund	4,920.14	402.73	5,322.87
D. A. R. Fund	1,810.62	186.33	1,996.95
Dental Fund	—	39.13	39.13
G. H. H. Emory Fund	—	697.58	697.58
Faculty of Physic Fund	61,615.76	2,937.15	64,552.91
Leon Frank Fund	2,466.56	398.35	2,864.91
Chas. Frick Fund	1,400.00	154.99	1,554.99
Julius Friedenwald Fund	11,978.29	1,076.81	13,055.10
A. Bradley Gaither Fund	—	600.08	600.08
General Endowment Fund	22,093.54	1,087.96	23,181.50
Katherine Gibson Fund	3,400.62	585.09	3,985.71
J. C. Hemmeter Fund	11,470.49	858.59	12,329.08
Chas. M. Hitchcock Fund	5,000.00	290.42	5,290.42
Joseph W. Holland Fund	—	15.41	15.41
Leo Karlinsky Fund	3,000.00	421.48	3,421.48
Law Fund	—	279.31	279.31
Pharmacy Fund	—	75.12	75.12
J. M. H. Rowland Fund	6,469.57	693.55	7,163.12
David Streett Fund	350.00	849.12	1,199.12
John F. B. Weaver Fund	90,460.00	5,298.82	95,758.82
Randolph Winslow Fund	2,500.00	85.72	2,585.72
E. & L. M. Zimmerman Fund	1,003.47	31.94	1,035.41
	$232,189.06	$17,783.04	$249,972.10

Total Dec. 31, 1934	$249,972.10	
Total Dec. 31, 1933	234,712.30	
Increase for 1934		$15,259.80

Statement of moneys withdrawn from the various funds during 1934

L. S. Ashman Fund—Scholarship	$150.00
Israel & Cecelia Cohen Fund—Scholarship	250.00
Leon Frank Fund—Scholarship	125.00
Julius Friedenwald Fund—research work in Anatomy	300.00
General Endowment Fund—Black & Co., accountants	5.00
Charles M. Hitchcock Fund—2 scholarships at $125.00 each	250.00
Leo Karlinsky Fund—scholarship	200.00
John F. B. Weaver Fund—	
Fellowships (3) paid in monthly installments	2,825.09
Hopper, Polk & Purnell—liability insurance	6.00

Statement of moneys withdrawn from the various funds during 1934—Continued

Stoner & Hobby—fire insurance on house at Manchester, Md.	$12.40
Randolph Winslow Fund—scholarship	125.00
E. & L. M. Zimmerman Fund—prize for nurses	50.00
Total	$4,298.49

In spite of the depression these funds show a slight increase over the statement of the preceding year. This will be good news to those interested in the financial welfare of the University. Again we take this opportunity to impress upon our friends and alumni that no school can carry on without resources other than the income derived from its tuition fees. We, therefore, desire to reiterate that any assistance will be much appreciated by the University authorities. All gifts are placed in the permanent funds and are administered by the Board of Trustees of the Endowment Funds, a body incorporated by the State of Maryland and independent of the Faculty of Physic. This proviso assures the donor that the corpus of the gift will be preserved and that his wishes will be strictly observed.

Contributions, bequests and donations, if intended for the School of Medicine, may be given to the general medical fund or to a special purpose—student loan, hospital, publication, library, research fellowship, professorship.

PROCEEDINGS

OF THE

UNIVERSITY OF MARYLAND BIOLOGICAL SOCIETY

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Harvey G. Beck, John C. Krantz, Jr., H. Boyd Wylie, E. Vanden Bosche, *Councillors*

The Sixty-fifth Program Meeting of the University of Maryland Biological Society was held Tuesday, January 29, 1935 at 8:30 P.M. in the amphitheatre of the University of Maryland Hospital.

Dr. William K. Gregory, Professor of Paleontology at Columbia University and Curator of Comparative and Human Anatomy at The American Museum of Natural History, was the guest speaker of the evening. A large audience, including several of our friends from the Johns Hopkins University, was present to receive his paper. Preceding the Program Meeting the Society entertained Dr. Gregory at a dinner given in the dining room of the Hospital. The meeting was called to order by President Appleman and Presidential Representative Uhlenhuth presented the speaker. An abstract of Dr. Gregory's paper appears below.

THE STUDY OF HUMAN EVOLUTION: A PLEA FOR A MORE SYNTHETIC APPROACH

By William K. Gregory, Ph.D.

The speaker began by contrasting two opposing theories of the origin of man: the *anthropocentric*, in which man was regarded as the center of the drama of creation, and the *cosmogenic*, according to which the evolution of man may be considered as a quite minor and transitory incident in the history of the cosmos.

The emergence of man, whether in the late Pliocene or in a somewhat earlier horizon, was a relatively recent event in the long history of the vertebrates, a history which may have been of the general order of magnitude of five hundred million years. More than a century of investigations by taxonomists, comparative anatomists and palæontologists, have furnished the material for a revised *échelle des êtres*, or scale of beings, from fish to man. This series, representing the small residue after the elimination of hundreds of too specialized species of fishes, amphibians, reptiles and mammals, includes only the most generalized representatives of the earlier classes. The series, illustrated by carefully constructed models of skeletons, begins with *Cheirolepis*, a stem-ganoid fish of the Old Red Sandstone (Mid-Devonian) with sharklike body and fins. The second is *Eusthenopteron*, a crossopterygian of the Upper Devonian, with labyrinthodont teeth and stout fleshy pectoral and pelvic paddles supported by a system of branching and radiating bony rods. This type of limb skeleton appears to be the most favorable known starting-point for the transformation into cheiropterygial or five-rayed appendages. The third form in the series is *Diplovertebron*, an Upper Carboniferous labyrinthodont amphibian, in which the general structural pattern of the skeleton presents an ideal ground-plan for the diversified skeletons of all the higher vertebrates; the fourth is the Permo-Carboniferous *Seymouria*, combining essential features of amphibians and reptiles, a crawling form with wide-spread limbs. The fifth stage is represented in this exhibit by the Upper Triassic *Cynognathus*, a fairly swift-moving, predaceous form, one of the more progressive of the extinct South African mammal-like reptiles, standing relatively near to the stem of the mammals. For the sixth stage the skeleton of the existing opossum was chosen, for although the opossum is only a surviving form, it retains a generalized type of mammalian skeleton that was dominant in the later Age of Reptiles. The opossum, it will be observed, illustrates an early stage in adaptation to arboreal habits, while the seventh stage, represented by the generalized primate *Notharctus* of the Eocene epoch, reveals a relatively advanced stage of arboreal adaptation. Here the five-toed foot was modified into a clamping organ, the very large strongly divergent great toe being opposed to the volar surfaces of the remaining four digits. This type of foot, already present in all the known families of Eocene primates and equally characteristic of all known monkeys and apes, was evidently a feature of relatively great antiquity and a "basic patent" for the order as a whole. For the eighth stage of the series the skeleton of the gibbon was selected, for although this ape is doubtless overspecialized in the extreme length of its arms and hands, it nevertheless forms in many of its characteristics a structural link between primitive monkeys on the one hand and the anthropoid-man stock on the other. The ninth stage is illustrated by both the chimpanzee and the gorilla, whose general skeletal patterns, in the opinion of the speaker, have diverged far less from the inferred plan of the common ancestor of man and apes than is often supposed.

The speaker was inclined to dissent, with some emphasis, from the possible objection that the foregoing series is "hypothetical" in any fair usage of that term. Obviously when the record covers several hundred millions of years, involving random destruction of the vast majority of species, we are not going to find easily either a direct line of ascent over the whole period or even a fossil series in which each term is equally close to the main ancestral line. All that has ever been claimed for the present series is that its members are nearer in structural patterns to a direct line of ascent from fish to man than any other forms whose skeletons were sufficiently well known in 1932. With further discoveries an even closer approximation to the direct line of ascent may be expected. Viewed as a whole, however, the present series is the net resultant of cumulative but usually independent investigations in many fields of geology, palæontology, zoology, comparative anatomy and connected subjects.

The speaker then reviewed some of the evidence tending to support the following conclusions:

(1) The emergence of each main stage from the preceding stage (through transitional forms that in some cases are more or less fully known) took place as a result of a genuine metamorphosis or transformation, often involving profound anatomical readjustments, "in adaptation" (as the conventional phrase runs) to the change from one major type of life habits to the next. This is seen, for example, in the evolution of paddles from keel-like fins of lower fishes, in the evolution of running from crawling

types of locomotor skeletons and in the marked remodelling of the skull following the abandonment of piscine life habits.

(2) While there is a fairly general agreement as to the broad steps in the evolution from ganoid fishes to amphibians, from amphibians to stem reptiles and from mammal-like reptiles to mammals, there has been considerable disagreement as to the later stages of evolution from the earliest Primates to Man.

(3) At the present time there may be said to be only two principal views as to the origin of man: the first, that which regards man as the offspring of a wholly unknown family of Old World Primates, the second, that which considers the common ancestors of apes and man to be in most features structurally much nearer to the former than to the latter.

(4) This disagreement appears to be due in part to a tendency for specialists in mammalogy, anthropology and palæontology to lose sight of the principle that the evolution of new major types has involved so profound a transformation that remote ancestors are often found to be extremely unlike their descendants, since the latter have acquired many new and unexpected characteristics of which there were at most only faint indications in the remote ancestral stages.

(5) The frequent suggestions that the resemblances between man and ape are due to "parallelism" rest largely upon vague analogies and upon an uncritical acceptance of the unverified idea that because a few similar characters arise by "parallelism" among titanotheres and proboscideans, all identical characters between anthropoids and man are likewise due to the same "cause" (?), while all differences are due to different ancestry.

(6) The relatively intimate and far-reaching relationship between the anthropoid and human stock is attested by hundreds of *qualitative* agreements, as, for example, in the placentation, brain, reproductive systems, dentition, skull structure and so forth.

(7) On the other hand, man is distinguished from the anthropoids by a large series of *quantitative* differences.

(8) The human foot, like a palimpsest, reveals clear traces of an earlier arboreal habitus in which the great toe retained its primitive primate divergence, and a later terrestrial habitus which has made possible the upright posture and efficient walking and running on the hind legs. The new habitus was brought about by (a) relative enlargement of the first digit and reduction of the other digits; (b) permanent adduction of the first digit, with the development of a strong transverse ligament out of the connective tissue lying between the first digit and the second; (c) enlargement of the proximal tarsals; (d) various shifts and readjustments connected with the establishment of the longitudinal and transverse arches of the foot.

(9) Other quantitative changes in modifying a primitive ape-like skeleton into the human type included the following: (a) establishment of the lumbar curve in the vertebral column; (b) great widening and strengthening of the sacrum and its attachments; (c) correlated widening of the ilium. The appearance of a sacro-sciatic notch and the U-shaped modification of the sacral articulation of the ilium were direct results of the foregoing processes (a and b).

(10) Evidence was cited tending to show that in the transformation of primitive ape into man the thumb was lengthened, the palm widened and the fingers shortened, at least relatively.

(11) Such quantitative differences in proportions between man and ape, although very numerous, were for the most part introduced during the period in which individual development and maturity were progressively lengthened. This idea was suggested by Davidson Black in connection with the great increase in the size of the brain in man, but the principle seems applicable to skeletal differences also.

(12) In short, many skeletal differences between man and chimpanzee which are

ordinarily attributed to *divergence* may rather be the measure of the profound *transformation* from ape to man.

The Sixty-sixth Program Meeting of the University of Maryland Biological Society was held Tuesday, February 19, 1935, at 8:30 P.M. in Chemical Hall of the School of Medicine. President Appleman presided. Dr. Beck and Dr. Merkle presented a paper on Tularemia, an abstract of which appears below. Following the paper, Dr. C. G. Warner of the Department of Pathology of the University of Maryland School of Medicine discussed the pathology of Tularemia.

TULAREMIA: AN AUTOPSY REPORT OF A FATAL CASE OF THE TYPHOID FORM CAUSED BY THE INGESTION OF RABBIT

By Harvey G. Beck, M.D., and Walter C. Merkel, M.D.

From the Departments of Medicine and Pathology, School of Medicine, University of Maryland

A presentation of a clinical case of tularemia with symptoms characteristic of the typhoid form. The disease was transmitted through ingestion of improperly cooked rabbit. The outstanding symptoms were fever, chills, headache, general muscular pains, weakness, anorexia, nausea, vomiting and a low muttering toxic delirium. The patient died in coma on the twelfth day of the disease. Agglutination tests for tularemia, typhoid, paratyphoid A and B, typhus and undulant fever were negative. Guinea pig inoculations with blood and tissue obtained at autopsy were positive for tularemia. Postmortem studies revealed ulceration of the stomach, duodenum, ileum and head of caecum. Multiple areas of focal necrosis of the liver, spleen and regional lymph nodes. Generalized cloudy swelling, congestion, oedema and infarction of the lungs, hemachromatosis, portal cirrhosis, fibrosis of the pancreas, fibrous pleuritis and moderate arteriosclerosis. Features unique in this study are that it is the first typical case of the typhoid form which has been examined postmortem, the first to be recorded with characteristic lesions of tularemia in the gastrointestinal tract and the fourth instance of the disease developing through the ingestion of rabbit.

The Sixty-seventh Program Meeting of the University of Maryland Biological Society was held Tuesday, March 19, 1935, at 8:15 P.M. in Chemical Hall of the School of Medicine. President Appleman presided. Two papers were presented, abstracts of which appear below.

THE INFLUENCE OF CERTAIN ALKALI IONS ON THE OXYGEN DEMAND OF SEWAGE

By Jacob E. Schmidt, Ph.G., and John C. Krantz, Jr., Ph.D.

From the Bureau of Chemistry, Maryland State Department of Health

The influence of various ions of the alkali group was studied on the biochemical oxygen demand of raw sewage collected in the vicinity of Baltimore. The standard

biochemical oxygen demand methods set forth in the reports of the U. S. Public Health Service were employed. From analysis in general the caesium ions in concentrations of one-thousandth molar and rubidium ions in similar concentrations exerted a retarding influence on the oxidation of sewage. The other ions of the alkali group did not exhibit this response. No explanation was given to account for these phenomena.

THE THYROIDS OF ANIMALS INJECTED WITH A COMBINATION OF THYREOACTIVATOR AND NERVE-STIMULATING DRUGS

By Eduard Uhlenhuth, Ph.D., and James U. Thompson

From the Department of Gross Anatomy, School of Medicine, University of Maryland

In a paper presented previously to this Society it was shown that the metamorphic action of the thyreoactivator hormone (extracted from the anterior lobe of the beef hypophysis) could be greatly accentuated by addition, to this hormone, of either pilocarpin or adrenalin.

In the present paper experiments are reported, which were undertaken to test the question, whether this accentuation of the metamorphic effects of the thyreoactivator was due to an increased stimulation of the thyroid gland in those animals in which pilocarpin or adrenalin had been added to the thyreoactivator.

Adult Californian newts were employed in these experiments. Each experiment consisted of 4 groups, a, b, c and d. Group "a" was injected with Ringer solution, group "b" with thyreoactivator, group "c" with thyreoactivator plus pilocarpin, group "d" with thyreoactivator plus adrenalin. The level of activity of the thyroids in each one of these 4 groups was determined by measuring (1) colloid-epithelium ratio, (2) the number of colloid vacules and, (3) the cell height. The values found were tabulated and the results shown in lantern slides.

In the animals injected with combinations of thyreoactivator and either pilocarpin or adrenalin the colloid-epithelium ratio was lower, the number of colloid vacules higher and the cell height greater than in animals injected with thyreoactivator alone. It was concluded that the nerve-stimulating drugs pilocarpin and adrenalin, although they have no effects upon the thyroid when injected by themselves, increase the thyroid-stimulating power of the thyreoactivator when injected in combination with this hormone.

The Sixty-eighth Program Meeting of the University of Maryland Biological Society was held Tuesday, April 16, 1935, at 8:00 P.M. in the Engineering Hall at College Park. President Appleman presided. Papers were presented by Dr. A. L. Brueckner and Mr. K. Pierre Dozois, abstracts of which appear below.

Preceding the meeting a dinner was held in the Dining Hall of the University.

EQUINE ENCEPHALOMYELITIS

By A. L. Brueckner, L. J. Poelma; C. L. Everson and R. C. Reed

From the Live Stock Sanitary Service Laboratory, University of Maryland, College Park, Maryland

As early as 1811 the Eastern Shore of Maryland and again in 1897 and 1901 that section and also Southern Maryland experienced a disease of equines, descriptions of which are similar to Encephalomyelitis as known at present. Outbreaks of equine disease were recorded in other sections of the United States at intervals from 1847. The rôle of Clostridium botulinum as an etiological factor in equine disease was suggested in 1900 and proven in 1917. Another etiological factor in wide-spread outbreaks was proven in 1930 when a filter-passing virus was found to be the cause of a fatal disease of equines in California. Later this same virus disease has been recognized in other western states and in 1933 and 1934 in Maryland. The viruses concerned in the western and eastern states have been shown to differ in pathogenicity and immunological properties. Numerous conditions surrounding the geographical distribution, seasonal occurrence, morbidity and the portals of entry of the virus suggest the probability of insect vectors. Experimental transmission of the virus through the agency of certain fresh and salt water mosquitoes bear out this theory. The viruses are capable of producing specific homologous immune sera. Experiments with vaccine produced by attenuation of virus-bearing brain suspensions give promise.

A STUDY OF THE ACID AND GAS FORMATION WITH CERTAIN SUGAR ALCOHOLS AND THEIR ANHYDRIDES BY MEMBERS OF THE COLON-AËROGENES-INTERMEDIATE GROUPS

By K. Pierre Dozois, M.S., Frank Hachtel, M.D., C. Jelleff Carr, M.S., and John C. Krantz, Jr., Ph.D.

From the Departments of Bacteriology and Pharmacology, School of Medicine, University of Maryland

"Previous work has shown that the anhydrides of dulcitol and mannitol, namely: mannitan, mannide, isomannide and dulcitan are not metabolized in the animal body. Dulcitol and mannitol are fermented by many organisms of the colon-aërogenes-intermediate groups, whereas their anhydrides are not utilized as determined by the ordinary fermentation tests."

THE EFFECT OF RADIUM RADIATION ON THE ELECTROPHORETIC VELOCITY, VIABILITY AND pH OF ESCHERICHIA COLI SUSPENSIONS

By K. Pierre Dozois, M.S., Grant E. Ward, M.D., and Frank W. Hachtel, M.D.

From the Department of Bacteriology, School of Medicine, University of Maryland

Escherichia coli suspensions were irradiated with 70 mg. of radium for from 70 mg. hours to 2450 mg. hours. The suspensions were prepared by growing the bacteria on proteose-peptone agar, pH 6.8 for 24 hours. The growth was removed from the surface of the agar by washing with distilled water. This growth was washed three times and resuspended in distilled water pH 6.8. The Kunitz modification of the Northrop-Kunitz Microcataphoresis Cell was used to make the electrophoretic measurements. The results are expressed in terms of 0.05 mm. distance, time in seconds, at 118 volts D.C. current.

It was found that:

1. The electrophoretic migration velocity of suspensions of Esch. coli is reduced by radium irradiations. As the dosage increases the velocity decreases.
2. Radium irradiations do influence the viability of the bacteria studied.
3. The percent of decrease in the electrophoretic velocity corresponds with the decrease in viability.
4. Radium irradiation has little or no influence on the pH of the suspension.

THE INFLUENCE OF HEAT AND AGE ON THE ELECTROPHORETIC MIGRATION VELOCITIES OF VARIOUS MICROÖRGANISMS

By K. Pierre Dozois, M.S., and Frank Hachtel, M.D.

From the Department of Bacteriology, School of Medicine, University of Maryland

Distilled water, pH 6.8, suspensions were made of cultures of Esch. coli and Aero. aerogenes grown on proteose-peptone agar, pH 6.8; and C. diphtheriae cultures, gravis, mitis and intermediate, grown on Löffler's blood serum medium, pH 7. These suspensions were allowed to age from 1 to 48 hours at 5°C., from 1 to 8 hours at 27°C.; were heated from 60° to 95°C., the heated suspensions were allowed to age from 1 to 8 hours at 27°C. Electrophoretic migration measurements were made using the Kunitz modification of the Northrop-Kunitz Microcataphoresis Cell.

It was found that:

1. The bacterial suspensions studied were kept at a temperature of 5°C. for as long as 48 hours without noticeable alteration in the zeta potential.
2. The bacterial suspensions studied were kept at 27°C. 2 hours without change after which time a measureable alteration in the zeta potential took place.
3. The bacterial suspensions studied were heated at a temperature of 60°C. for 30 minutes with no measureable change in the zeta potential.
4. The electrophoretic migration velocity of bacterial suspensions heated at a temperature of 60°C. for 30 minutes remained fairly constant for two hours at room temperature, after this time an alteration took place.
5. At temperatures above 60°C. a decrease in the zeta potential took place. This decrease became more marked as the temperature increased.

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The names listed above are officers for the term beginning July 1, 1935, and ending June 30, 1936.

SPRING EXERCISES

The Spring Activities held on May 30 to June 1, 1935 inclusive, are now a pleasant memory. The graduation exercises were held as during the past few years at the Ritchie Coliseum, College Park. The Medical School celebrated its One Hundred and Twenty-Eighth Anniversary with a large and enthusiastic gathering of the clan. The response was extremely gratifying to those in charge of arrangements.

The programme included much of interest and of profit to those attending. The main features were as follows:

Thursday, May 30th:

9.00 A.M. to Noon: Registration at Medical Alumni Building, 519 W. Lombard St. Surgical Clinics at the University Hospital.

12.00 A.M.: Complimentary Luncheon, University Hospital.

2.00 P.M.: Medical Clinics at the University Hospital.

4.00 to 7.00 P.M.: Inspection of New Hospital.

7.00 P.M.: Annual Banquet, Lord Baltimore Hotel.

Friday, May 31st:

8.00 P.M.: Pre-Commencement Gathering, Lyric Theatre.

Saturday, June 1st:

11.00 A.M.: Commencement Exercises, Ritchie Coliseum, College Park.

The annual dinner was held on Thursday, May 30th, at the Lord Baltimore Hotel. More than 300 guests were in attendance. The food was fine and all seemed to enjoy themselves immensely. President R. A. Pearson, The Honorable Howard W. Jackson, Mayor of Baltimore, Purdum Wright, representing His Excellency, the Honorable Harry W. Nice, Governor of Maryland, George M. Shriver, Chairman of the Board of Regents, Dr. J. M. H. Rowland, Dr. Arthur J. Lomas, The Honorable William P. Cole, Jr., Dr. Randolph Winslow, H. C. Byrd, John E. Raine, General Clinton L. Riggs, J. Milton Patterson, Austin Diggs, and the class of 1935, were the guests of honor.

An added feature this year was the pre-commencement exercises held at the Lyric Theatre. Dean Rowland acted as master of ceremonies. He was assisted by Dr. H. Boyd Wylie. The address to the graduates was delivered by Dr. Arthur M. Shipley. The winner of the gold medal for the highest general average in studies during the four year course was Mr. George Frederick Schmitt, Jr., Messrs. John Warren Albrittain, Edward Francis Cotter, Walter Lichtenberg, Douglas Rude Dodge, and Norman James Wilson won certificates of honor, and Mr. Cotter, the Dr. A. Bradley Gaither Memorial Prize of $25.00.

The orator at the graduation exercises was His Excellency, The Honorable Harry W. Nice, Governor of Maryland, who had conferred upon him also the degree of Dr. of Laws.

The Board of Regents, the President of the University, the Faculty of Physic, the Board of Directors and Officers of the Medical Alumni Association desire to express through the Bulletin their sincerest appreciation to the visiting alumni for their great support in making this year's commencement week a huge success. The interest and loyalty manifested by the alumni were a source of much satisfaction to the committee in charge of arrangements.

The following alumni registered during this year's celebrations:

Drs. Robert Lawson Kennedy, Malone, Fla.; C. W. Lurting, Pittsburgh, Pa.; Arthur H. Riordan, Indian Orchard, Mass.; George C. Medairy, Owings Mills, Md.; Frank W. Smith, Chestertown, Md.; Benj. F. Tefft, Anthony, R. I.; William W. Hala, New York City; J. Henry Orff, Shillington, Pa.; D. B. Jarrell, Beckley, W. Va.; J. Nataro, Newark, N. J.; Clay Durrett, Cumberland, Md.; Louis H. Gale, Erie, Pa.; Geo. C. Halley, Easton, Md.; John D. Robinson, Wallace, N. C.; D. J. Cronin, Huntington, W. Va.; W. H. Marsh, Solomons, Md.; Henry Oshrin, West New York, N. J.; Harold H. Fischman, Newark, N. J.; Jacob L. Dreskin, Newark, N. J.; Joseph R. Simon, Pittsburgh, Pa.; J. M. Silverstein, Millburn, N. J.; Joseph P. Ponte, Jr., New Bedford, Mass.; W. F. Gemmill, York, Pa.; N. A. Christensen, Philadelphia, Pa.; Geo. A. Zimmerman, Piketown, Pa.; Geo. McElfatrick, Wilmington, Del.; Edgar Miller, Richardson Park, Del.; Lawrence Phillips, Marshallton, Del.; H. B. McDonnell, College Park, Md.; Leo E. Pulaski, Shenandoah, Pa.; Leo T. Brown, Washington, D. C.; S. P. Balcerzak, Carnegie, Pa.; M. Alvord Gore, Bristol, Conn.;

John S. Gibson, Gibson, N. C.; Wm. Leichner, Hartford, Conn.; Geo. F. Sargent, Towson, Md.; I. Dana Kahle, Knox, Pa.; G. W. Kahle, Hadley, Pa.; George Seymour, Elizabeth, N. J.; John T. H. Powers, Norwalk, Conn.; Daniel E. Forrest, Hillsboro, N. C.; Roger Brooke, Washington, D. C.; C. B. Marshall, Nitro, W. Va.; S. H. O'Neill, Blue Hill, Nebr.; J. Walter Layman, Hagerstown, Md.; W. J. Heffner, Northport, L. I., New York; Hugh J. Devlin, Newark, N. J.; M. E. Gardner, Washington, D. C.; B. E. Wilkinson, Paterson, N. J.; Irwin J. Cohen, Brooklyn, N. Y.; W. I. Neller, Middletown, N. Y.; A. E. Foster, Wilkes-Barre, Pa.; Bryan N. Roberts, Hillsboro, N. C.; M. B. Kelly, Wheeling, W. Va.; Hanford Carvell, Gloucester, Mass.; Frank P. Firey, Portland, Oregon; James H. Fiscus, Greensburg, Pa.; A. L. Hyatt, Kinston, N. C.; J. B. Nicholls, Catawba Sanatorium, Va.; Geo. F. Speicher, Somerset, Pa.; W. C. Ensor, Cockeysville, Md.; J. Morris Reese, Lutherville, Md.; Eva F. Dodge, Winston-Salem, N. C.; A. J. Jackson, Waterbury, Conn.; E. E. Fitzpatrick, Waterbury, Conn.; R. E. Woodall, Charleston, W. Va.; George C. Berkheimer, Windber, Pa.; Geo. O. Sharrett, Cumberland, Md.; Walter Lichtenberg, New York; Arthur Hollander, New York City; G. Perry Ross, Auburn, N. Y.; C. D. Christ, Orlando, Fla.; W. J. B. Orr, Washington, D. C.; R. S. Anderson, Rockymount, N. C.; G. B. Harrison, Fredericksburg, Va.; Ira Burns, Wilmington, Del.; J. B. Anderson, Ashville, N. C.; M. James Fine, Newark, N. J.; M. R. Aungst, Mechanicsburg, Pa.; J. C. Hamrick, Shelby, N. C.; Chas. A. Minnefor, Newark, N. J.; C. E. Park, Parkersburg, W. Va.; Chas. W. Hartwig, Reisterstown, Md.; Robert V. Palmer, Avenue, Md.; Robert P. Winterode, Crownsville, Md.; A. W. Valentine, Washington, D. C.; H. J. Walton, C. G. Warner, John R. Oliver, E. H. Tonolla, Edgar B. Friedenwald, Robert P. Bay, Randolph Winslow, Andrew C. Gillis, H. E. Peterman, Frank K. Morris, W. A. Councill, R. G. Willse, Harry Goldsmith, M. Paul Byerly, D. J. Pessagno, Herbert E. Zepp, R. P. Carman, Geo. W. Murgatroyd, H. M. Robinson, Allen F. Voshell, C. A. Reifschneider, Susanne Sterling, Marius P. Johnson, Herman Seidel, A. W. Reier, Hugh R. Spencer, Mrs. Chas. A. W. Briscoe, Lyle J. Millan, Monte Edwards, John F. Hogan, C. R. Edwards, L. C. Dobihal, C. B. Ensor, J. Herbert Wilkerson, Albert R. Wilkerson, W. H. Triplett, W. H. Smith, John E. Legge, Robert L. Mitchell, Ralph P. Truitt, N. Winslow, James G. Howell, J. Morley Hoag, Howell I. Hammer, J. King B. E. Seegar, F. A. Ellis and Henry C. Houck of Baltimore, Md.

ITEMS

Drs. Paul Schenker, class of 1926, Harry Deibel, class of 1912, C. W. Didenhover, class of 1894, Hubert T. Gurley, class of 1925, Thomas H. Phillips, class of 1907 and Otto M. Reinhardt, class of 1893, have been nominated as coroners for the city of Baltimore by Governor Harry W. Nice.

At the annual meeting of the University of Maryland Dental Alumni Association, held in Baltimore, May 31, 1935, an oil portrait of Dr. Timothy O. Heatwole, class of 1897, and for many years dean of the dental department, was presented to the Dental department as a gift of its alumni.

Dr. Edward A. Looper, Baltimore, Md., class of 1912, professor of the diseases of the nose and throat, has been elected to membership in the American Laryngological Association. This is a signal honor as the roster of the society is limited. Dr. Looper is to be congratulated upon his good fortune in being elected to such an exclusive society.

The department of pediatrics will give a post-graduate seminar from June 3 to 22, 1935.

At the regular monthly meeting of the University Hospital Staff, held on April 15, 1935, the following programme was presented:

1. Vascular Anastomosis by a Modified Technic. Drs. Nathan Winslow and W. W. Walker.
2. The Effect of Radium Radiation on the Electrophoretic Velocity, Viability and pH of Escherichia Coli Suspensions. Mr. K. Pierre Dozois and Drs. Grant Ward and Frank W. Hachtel.
3. Public Health. Dr. Huntington Williams.

Dr. Lee W. Elgin, Miami, Fla., class of 1925, announces the opening of his offices for the practice of urology, at 330–331 Ingraham building, Miami.

Dr. Joseph Francis Barry, Washington, D. C., class of 1908, who has been a patient in the University Hospital, has sufficiently recovered to return to his home.

Drs. J. Mason Hundley, Jr., associate in gynecology, Allen D. Lazenby, class of 1916, N. Clyde Marvel, associate in surgery, Henry J. Walton, B. M. C., 1906, Nathan Winslow, class of 1901, have been appointed alternate delegates to the Medical and Chirurgical of the State of Maryland by the Baltimore City Medical Society, to serve for the year 1935, and Drs. Wetherbee Fort, class of 1919, Irvin O. Ridgely, class of 1918, George M. Settle, associate professor of neurology and clinical medicine, Frederick B. Smith, class of 1920, Howard H. Warner, class of 1914 and Charles A. Waters, class of 1911, to serve during 1935 and 1936.

Dr. W. W. Walker, Baltimore, Md., class of 1923, is a patient in the University Hospital.

Dr. Henry F. Hill, Baltimore, Md., class of 1877, has just returned from a fishing trip to Florida.

The following programme was presented at the March 18, 1935, meeting of the University Hospital staff:

1. Diagnostic Curettage. Dr. William S. Gardner.
2. Diabetes Insipidus and Xanthomatosis. Dr. T. B. Sprunt.
3. The X-ray in the Diagnosis of Varicosities of the Esophagus. Dr. E. Gerard Smith.

Dr. Ralph P. Truitt, Baltimore, Md., class of 1910, associate professor of psychiatry, was recently elected president of the Ortho-Psychiatric Association for the year, 1935.

The editors take this opportunity to thank Mrs. Ruth Lee Briscoe, the librarian, for her efficient preparation of the annual indices of the Bulletin.

Dr. Theresa O. Snaith, 14 Main Avenue, Weston, W. Va., class of 1923, is secretary of the Lewis County Medical Society.

Dr. Daniel J. McCarthy, Bridgeport, Conn., P. & S., class of 1906, who died recently, left an estate valued at $150,000 or over. Under the terms of his will, St. Vincent's Hospital, Bridgeport, will receive $125,000. He also left bequests to St. Charles' College, Catonsville, Md. and to St. Mary's Seminary, Baltimore, of $10,000 each, for the education of young men for the priesthood.

Dr. Harry Friedenwald, Baltimore, Md., P. & S., class of 1886, read a paper on Moses Maimonides, before the Johns Hopkins Medical Historical Club and the Osler Historical Society, at the Institute of the History of Medicine, Johns Hopkins University School of Medicine, on April 1, 1935.

Dr. Edward T. W. Hall, Weston, West Virginia, U. of Md. Class of 1885 celebrated on April 1, 1935 the fiftieth anniversary of his entry upon the practice of medicine. Following graduation Dr. Hall returned to his native state and for a few months practiced at Buckhannon but soon moved to Freemansburg, Lewis County where the Hall family originally lived. He was well established in practice when, in 1900, large oil and gas developments were started in the county. The need for surgery and hospitalization for the hundreds of men engaged in this work was recognized by Dr. Hall. He did post-graduate work in Baltimore and Chicago and in 1907 he built the first hospital in Lewis County, which he operated until 1921 when he moved to Weston and with Dr. W. H. Greene established the City Hospital. He works daily at the hospital and his office and makes house calls as well. Dr. Hall volunteered, in 1918, for service in the United States Army, he was located at Newport News, Virginia, in the surgical section, with the rank of captain. He is at present commander of the Weston Post No. 4, American Legion.

DEATHS

Duncan, Charles Granville, Socorro, N. M.; class of 1881; aged 85; died, March 27, 1935.

Banks, George Washington, Shepherdstown, W. Va.; class of 1897; aged 79; died, February 26, 1935, of hepatic cirrhosis.

Boynton, Emerson, Lancaster, Pa.; P. & S., class of 1897; aged 62; died, February 24, 1935.

Brack, Charles Emil, Baltimore, Md.; P. & S., class of 1895; professor of clinical obstetrics, University of Maryland; fellow of the American College of Surgeons; treasurer of the Medical and Chirurgical Faculty of the State of Maryland; aged 69; died, April 4, 1935, of myocarditis.

Bressler, Frank C., Baltimore, Md.; P. & S., class of 1885; aged 75; died, May 18, 1935.

Brown, James Edmund, Bryantville, Mass.; P. & S., class of 1886; aged 81; died, February 8, 1935, of lobar pneumonia.

Campbell, Lewis McClure, Red Sulphur Springs, W. Va.; P. & S., class of 1887; aged 71; died, March 31, 1935, of carcinoma of the stomach.

Cannon, William Timothy, Brooklyn, N. Y.; B. M. C., class of 1901; formerly resident physician in the Brooklyn Home for Consumptives; aged 59; died, January 19, 1935, of cardiac disease following an operation.

Clayton, Lawrence G., Central, S. C.; class of 1878; past president of the Pickens County Medical Society; aged 80; died, February 17, 1935, of bronchopneumonia and acute dilatation of the heart.

Cleaver, James Harvey, Los Angeles, Calif.; class of 1880; formerly mayor of Council Bluffs, Iowa, aged 78; died, February 7, 1935.

Clodfelter, Charles Meade, Lexington, N. C.; P. & S., class of 1905; aged 56; died, January 23, 1935, of endocarditis, chronic nephritis and influenza.

Corbell, Edwin Ferdinand, Sunbury, N. C.; class of 1886; aged 74; died, April 11, 1935.

Davis, Charles R., Baltimore, Md.; class of 1890; aged 76; died, January 16, 1935, of chronic nephritis.

Donovan, Stephen Francis, Derby, Conn.; P. & S., class of 1902; aged 55; died, February 21, 1935, of cardiac disease.

Evans, William Samuel, Columbus, Nebraska; P. & S., class of 1903; fellow of the American College of Surgeons; served during the World War; aged 71; died, March 29, 1935, of lobar pneumonia.

Flannery, Patrick J., Waverly, N. Y.; B. M. C., class of 1895; died, March 10, 1935, of chronic endocarditis and arteriosclerosis.

Groff, Chester C., Ozone Park, N. Y.; B. M. C., class of 1905; served during the World War first in the Russian army where he attained the rank of general and later with the American forces as a major in the medical corps; aged 54; committed suicide by drinking poison, May 31, 1935.

Henderson, Simril McDowell, Charlotte, N. C.; class of 1894; aged 65; died, April 12, 1935, of cerebral hemorrhage.

Jordan, Howe A., Big Island, Va.; P. & S., class of 1879; aged 82; died, March 13, 1935.

Martin, Thomas Paul, Taos, N. M.; P. & S., class of 1887; connected with the Indian service; health officer of Taos County; served during the World War; aged 70; died, April 11, 1935, of cerebral hemorrhage.

Magruder, William Edward, Baltimore, Md.; B. M. C., class of 1895; at one time associate professor of therapeutics in the College of Physicians and Surgeons of Baltimore; aged 61; died, March 29, 1935, at Miami, Fla., of acute peritonitis and carcinoma of the sigmoid.

Dr. Magruder was fourth in a line of Quaker physicians prominent in Maryland since the latter part of the eighteenth century, and great-grandson of one of the founders of the Medical and Chirurgical Faculty of Maryland. Born at Sandy Spring on June 9, 1873, Dr. Magruder was the son of the late Dr. William Edward (class of 1854) and Mary Brooke Magruder. Educated at the Sherwood Friends School and at George Washington University, he was graduated from the old Baltimore Medical College in 1895.

During the earlier years of his practice, he was an associate professor of clinical medicine at the College of Physicians and Surgeons, and was editor of the *Medical and Chirurgical Faculty Bulletin* from 1915 to 1917. He had joined the faculty a year after his graduation from medical school, and was secretary of the Baltimore City Medical Society from 1907 to 1911. He had also been a member of the visiting staffs of the Mercy Hospital and the old Bay View Asylum, and was a fellow of the American Medical Association.

A number of years ago Dr. Magruder retired from active private practice and made a specialty of insurance medicine. He was the author of "Claims Arising from Results of Personal Injuries," and was considered an authority on insurance medical claims.

Since Dr. Magruder's great-grand-father, Dr. Zadok Magruder, Jr., aided in founding the Medical and Chirurgical Faculty in 1799, there had always been one of his direct descendants in the faculty.

Dr. Magruder married Miss Maude Martin in 1900. In addition to his widow, Dr. Magruder is survived by a son, John Robinson Magruder, a student at St. John's College, who intends to study medicine.

McCarthy, Daniel Joseph, Bridgeport, Conn.; P. & S., class of 1906; aged 53; died, April 23, 1935.

McGougan, James Vance, Fayetteville, N. C.; class of 1893; past president of the Medical Society of the State of North Carolina; formerly member of the state legislature; county coroner; aged 64; died, March 13, 1935, of cerebral hemorrhage.

Michael, Willis S., Junior, W. Va.; P. & S., class of 1893; age 63; died, during the early part of 1935, of angina pectoris.

Miller, Samuel G., Chester, S. C.; P. & S., class of 1879; aged 74; died, January 21, 1935, of arteriosclerosis and senile gangrene.

Morton, Rush Kersey, Juniata Pines, N. J.; P. & S., class of 1900; veteran of the Spanish-American War; aged 72; died, January 10, 1935, of cardiac disease.

Nicholson, John Thorn, Bath, N. C.; P. & S., class of 1885; aged 76; died, January 31, 1935, of angina pectoris.

Nicholson, William H., Henderson, N. C.; class of 1889; aged 70; died, April 8, 1935, of chronic nephritis.

Norris, Milton D., Eldersburg, Md.; P. & S., class of 1892; past president of the Carroll County Medical Society; veteran of the Spanish-American War; aged 63; died, February 17, 1935, of cardiac disease.

Price, John Henry, Horseheads, N. Y.; P. & S., class of 1878; aged 80; died, January 23, 1935.

Ragan, Otho H. Williams, Hagerstown, Md.; class of 1874; fellow of the American College of Surgeons, aged 81; died, January 15, 1935, of pneumonia.

Ranson, Briscoe Baldwin, Harpers Ferry, W. Va., class of 1869, aged 89, died July 22, 1934, of intestinal toxemia. He was born at Staunton, Va., August 18, 1845. His parents moved to Jefferson County shortly before the war between the States. Dr. Ranson was only sixteen years old when he enlisted in the Confederate army early in the war as a member of Company B, 12th Virginia Cavalry of J. E. B. Stewart's division, taking part in many battles for the Cause he loved. After the war, he attended Captain McDonald's preparatory School at Cool Spring, Virginia, and from there he went to the University of Virginia where he studied medicine for one year, completing his course at the Medical School of the University of Maryland at Baltimore, March 3, 1869, or 66 years ago; he was thus, at his death, one of the oldest alumni of the Medical School. He served as interne in Baltimore, had charge of Bay View for a year and did post-graduate work at Bellevue Hospital, New York. He went to Harpers Ferry in 1875 and remained in continuous practice there until his retirement in 1931, at the age of 85. He was a member of the surgical staff of the Baltimore and Ohio Relief Department until his retirement and was probably the oldest doctor in the service of the company. It is seldom given to one community to enjoy the skillful service of a beloved physician over a period of 60 years, as was the case of a large area over which his territory extended, it being portions of Jefferson County, West Virginia, Loudoun County, Virginia, and Washington County, Maryland. Born of a long line of distinguished ancestry, he innately possessed a personality of rare charm and a character of honor, integrity and industry; these, combined with an outstanding professional ability, equipped him for a position of honor which he enjoyed among his fellowmen. He was recognized as a highly successful obstetrician, a branch of the science towards which he inclined, and he cherished the distinction of never having lost a mother during the period of birth. Until the day of his retirement, even till the day of his death, he never ceased to grow with his profession, but kept signally abreast of its great strides and accomplishments. The writer has known him for many years and always as a vigorous, indefatigable labourer in a field of endeavour which he honored throughout his long, active career.

Dr. Briscoe Baldwin Ranson

Rosenthal, Melvin Samuel, Baltimore, Md.; P. & S., class of 1891; professor of dermatology in the University of Maryland, fellow of the American College of Surgeons; aged 65; died, February 16, 1935, of carcinoma of the rectum.

Ruhräh, John, Baltimore, Md.; P. & S., class of 1894; professor of pediatrics at his alma mater; past president of the American Pediatric Society (1924); past president of the American Library Association (1927); past president of the Medical and Chirurgical Faculty of the State of Maryland (1917); past president of the American Academy of Pediatrics; past president of the Research Society and of the Osler Historical Society; a member of the school-board; co-author of Diet in Health and Disease, Dietetics for Nurses and Poliomyelitis; author of Manual of Diseases of Infants and Children and Pediatric Biographies; editor of Pediatrics of the Past and William Cadogan, His Essays on Gout; associate editor of Annals of Medical History; aged 63; died, March 10, 1935, of arteriosclerosis hypertension and cardio-vascular disease. Four years ago Dr. Ruhräh was stricken with infantile paralysis. He was born at Chillicothe, Ohio, on September 26, 1872. His parents were Conrad and Mary Fincknauer Ruhräh. *The Sun*, Baltimore, Monday Morning, March 11, 1935, contained the following editorial notice upon Dr. Ruhräh's demise:

> In the death of Dr. John Ruhräh Baltimore loses one of its great men. A world-wide reputation in medicine inevitably influences young practitioners and the schools themselves for many years to come, but mankind has never found a way to pass on from a dying hand to the next generation the full glow of learning's torch. The personal endowment which John Ruhräh combined with years of study and professional experience cannot be transmitted save, weakly, by example. What the next generation retains of noble example is posterity's good fortune. No student can develop save from his own resources those qualities of perfect detachment, of realism to the point of severity, of absolute concentration on the tangibles in a problem of life and death which Dr. Ruhräh possessed to a degree rarely attained.
>
> These qualities were discernible, too, in fields outside his profession. They made him a valuable member of the School Board. To that group, freighted with its grave responsibility for an unreckoned future, he brought an expert knowledge and an abundant energy, despite physical afflictions, which he applied to the swift betterment of the city's handicapped children and the slower, less easily measured betterment of the average child as well. His opportunities in this field were too brief.
>
> Cultural things caught his prompt support. At the operas, the symphonies, the recitals he was a familiar figure—always in the identical seat as close as possible to the exact center of the Lyric—from which at the last note of the performance he fairly bounded to his feet on his headlong flight from the hall toward the first motor at the curb. He was for years a Baltimore guarantor of the Bach Choir and a regular pilgrim to its May festival in Bethlehem. The orchestras of Europe he knew from his many summer trips, divided almost evenly among music festivals, art galleries, hospital clinics and the restaurants where he was sure to encounter the almost perfect poem in food and wine. His writings, quite apart from his authoritative works on medicine, are familiar to readers of notes on new books and old music. His was, in brief, a broad and deep culture which roamed through all the fine arts and many unexpected fields of learning, and never lost contact with the paths of pleasant living.
>
> Of his recent years of affliction it is difficult to write without emotion. Few stricken down at his age would have recovered, or wanted to recover. To this determined man affliction was simply something to be conquered. The stroke had not touched his alert mind or his indomitable will at all. Through them, by patient labor which none save a few close friends know, with suffering of which even they never saw a trace in his stoic expression, this extraordinary man steadily rebuilt the crippled muscle-control to a point where he once more was able to engage in most of his lifelong activities. No example in all his life was more admirable than this display of fortitude and gallantry, an example not alone for younger doctors but for laymen of all ages and conditions. Rich as was this man's life, it was far too short for all the things his great spirit had to do.

and the *Evening Sun* of the same date spoke editorially as follows:

> The many varied interests which made up the life of Dr. John Ruhräh and won for him his long list of friends were, after all, not the foundation upon which his career and his reputation were built. They made him popular, but they did not make him great.
>
> What made him great was his possession of that subtle sense which often enabled him to say at a glance the exact nature of the disease or illness from which his patients suffered. Some say that this gift is intuitive. Some say that it is the result of accumulated experience. But whatever its explanation, the fact is that Dr. Ruhräh was a great diagnostician. The exact methods of modern scientific medicine served in most cases simply to confirm his original findings.
>
> There is a tendency in some medical circles nowadays to belittle the bedside diagnosis, and it is quite easy to believe that with the development of elaborate clinics with their blood tests, metabolism charts and all the rest, the practicing physician is not often stimulated to develop the diagnostic sense. It is simpler and maybe a little shrewder to trust the specialists, even if the cost to the patient is greater.
>
> Dr. Ruhräh was not one to belittle modern medicine. But he had the gift of diagnosis and there is hardly a medical scientist today in this region who is unable to testify to the fact.

Sanger, Frank D., Baltimore, Md.; P. & S., class of 1888; professor emeritus of rhinology and laryngology at his alma mater; aged 69, died, May 15, 1935. Dr. Sanger was born in Canterbury, Conn., August 27, 1865 and received his preliminary education at Williston Academy, Easthampton, Mass. He took post-graduate courses in diseases of the nose and throat in Berlin, and at the

Allgemeine Krankenhaus in Vienna. He was a member of the Medical and Chirurgical Faculty of the State of Maryland, the Baltimore City Medical Society; the Baltimore County Medical Society; the Research Club of Baltimore; the Southern Medical Association, and the American College of Surgeons.

SCHENCH, POWHATTAN STANLEY, Norfolk, Va.; P. & S., class of 1881; formerly director of public welfare and health commissioner; aged 71; died, January 24 1935.

SPENCER, ERNEST, Bel Alton, Md.; class of 1892; aged 65; died, March 12, 1935, of chronic myocarditis.

STEARNS, BENJAMIN W., Unadilla, N. Y., P. & S., class of 1892, also University of Buffalo, School of Medicine (1893); aged 69; was killed, May 30, 1935.

TALBOTT, LOUIS WILSON, Elkins, W. Va.; class of 1883; aged 79; died, March 17, 1935.

TAYLOR, GEORGE ASH, New York, N. Y.; class of 1890; aged 67; was found dead in bed, December 30, 1934, of cardiac disease.

WEDAMAN, THOMAS HAYNE, Johnston, N. C.; class of 1909; aged 52; died, January 9, 1935.

WEGER, GEORGE STEPHEN, Redlands, Calif.; B. M. C., class of 1898; aged 60; died, January 16, 1935, of cardiac disease. The following memorial was published in a program folder of the San Bernardino County Medical Society Tuesday, February 5.

> Succumbing to a heart attack, Dr. George S. Weger died at 8.30 A.M., January 16, 1935, at his Redlands institution, the Weger Health School, 1154 West Highland Avenue.
>
> Although Dr. Weger had knowledge of his heart condition for a considerable time, his death was a shock to the community and this Society. Professional and club circles mourned his sudden passing, and the Redlands city council prepared a formal resolution of condolence addressed to the widow and other survivors.
>
> He attended to his duties in customary manner until illness forced him to return to bed. Death followed promptly. He was 60 years old.
>
> Dr. Weger was born at Baltimore, Maryland, on September 2, 1974, the son of Frank A. and Elizabeth (Dietzel) Weger. He was graduated from the high school at Delphos, Ohio, and obtained his medical degree from the Baltimore Medical College in 1898. He was married to Mrs. Katie Trame, of Delphos, on October 1, 1900, and practiced medicine in Delphos until 1912.
>
> He engaged in research and general practice in the Canadian Northwest until the close of 1918, then specialized in dietetics at Denver, until 1923, when he went to Redlands.
>
> He was a member of the American, California State and San Bernardino County Medical Associations.

WELCH, WILLIAM SELLMAN, Annapolis, Md.; P. & S., class of 1885; formerly health officer of Annapolis; aged 81; died, February 11, 1935.

YOUNG, JOHN DANIEL SMETZER, Graceham, Md.; P. & S., class of 1887; aged 72; died, recently, in the Emergency Hospital, Washington, D. C., following a prostatectomy.

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OBSERVATIONS ON 518 CONSECUTIVE CESAREAN SECTIONS PERFORMED AT THE UNIVERSITY HOSPITAL

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BALTIMORE, MD.

The modern era of cesarean section is said to have begun with the monograph of Max Sänger in 1882. Before that time the operation was so fatal that it was performed as a last resort and for a period of ninety years prior to 1876 not a single cesarean section was done in Paris. That the early American surgeons played a conspicuous rôle in bringing about this new era is well related by Eastman on the fiftieth anniversary of the modern cesarean section. Since then, due to the improvement in modern surgical technic, the indications for this operation have increased and the prognosis has improved tremendously, which has resulted in the performance of many cesarean sections. Thus, in recent years many reports from various parts of this country and elsewhere have appeared in the literature recording the results, experiences and recommendations on the subject of this operation. We desire to record our observations on 518 consecutive cases of cesarean sections performed at the University Hospital from 1920 to 1933 inclusive.

The University Hospital is a teaching institution and these operations were performed by various members of the teaching staff, together with the various residents and assistant residents who receive their training here.

The cases treated in the hospital are practically all clinic patients; extremely few patients fall in the private practice class. Further,

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From the Department of Obstetrics, School of Medicine, University of Maryland.

Read before The Baltimore Obstetrical and Gynecological Society, November 9, 1934.

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the great majority of patients treated in our Out-Patient Department are negroes; and to a similar but somewhat less degree this ratio holds true for the patients treated in the hospital. Thus for the years 1920 to 1926 inclusive 88.9% of the patients delivered in the out-door service were negroes; while from 1927 to 1933 inclusive this ratio was 85.3%. This will of course have a definite bearing upon our results because our clinic deals not only with this mentally inferior but also with this physically underdeveloped class of people.

It must likewise be emphasized that the hospital is the "clearing house" for the pathological cases in our out-patient department, the Baltimore City Health Department Maternity service and for many of the physicians of the City and State. Thus of necessity our Hospital maternity becomes a pathological service. This is well shown when from 1921 to 1926 inclusive out of 1202 deliveries in the hospital 805 or 70.7% were pathological cases and from 1927 to 1933 inclusive out of 2704 deliveries 1516 or 52.36% were pathological cases. In addition to this many of our cases are emergency or unregistered cases as illustrated in the year 1932 where out of 407 patients delivered in the hospital 108 or 26.53% were unregistered and in 1933 out of 374 cases 142 or 38% were unregistered. All these facts must be borne in mind to evaluate intelligently and appreciate the results of this report.

For purposes of comparison we have divided our cases into two series. Series I which includes 183 cases delivered from 1920–26 inclusive and in which series the classical section was the principle operation; and series II which included 335 cases delivered from 1927–33 inclusive, in which series the classical section was restricted to the favorable cases and the low-cervical operation was employed for those cases that had been in labor, with or without rupture of the membranes, and which were considered potentially infected. The Porro operation was done in both series for the frankly infected cases.

In calculating the incidence of cesarean section in these two series we have included both the hospital and the out-patient department deliveries, since the two are intimately connected and represents our total service. Thus for series I the incidence for cesarean section was 1 to 42 or 2.4%; and for series II, 1 to 31.2 or 3.2%. The reason for the increase in the incidence in the second series will be seen in the large number of placenta praevia cases delivered by this operation, and which will be discussed later.

The indications for the operations are shown in table 1 and a number of interesting changes will be noted in the two series. Wherever there existed more than one indication for the section, the major indication only was listed. In series I, 60.7% of the cases were done for obstructive indications; while in series II only 39.4% were done for the same indications. This is only an apparent decrease, because in the second series we have performed many more sections for placenta praevia. If we should eliminate the placenta praevia cases, then the percentage in the second series becomes 57.6%. Thus the obstructive indications remains essentially the same in the two series.

TABLE 1

Indications for cesarean section

	SERIES I (1920–26)	SERIES II (1927–33)
Total number of cases	183	335 cases
Obstructive group	111 cases (60.7%)	133 (39.4%)
Contracted pelvis	79	82
Cephalo-pelvic disproportion	31	37
Prolong labor	4	0
Cervical dystocia	1	11
Previous dystocia	0	1
Previous section	2	0
Dermoid cyst-obstructing	0	1
Transverse presentation in primigravida	0	1
Placenta previa (7.1%)	13	102 (31.0%)
Preëclampsia (5.5%)	10	29 (8.7%)
Eclampsia (15%)	28	6 (1.8%)
Nephritis (1.6%)	3	14 (4.2%)
Abruptio placenta (1.6%)	3	24 (7.5%)
Cardiac	2	4
Mental deficiency	0	5
Appendicitis (chronic and subacute)	4	0
Toxic chorea	1	0
Epiplocele, strangulated	1	0
Elderly primigravida	1	0
Encephalitis	0	1
Tuberculosis	0	2
Chronic invalidism	0	1
Myomata uteri	0	2
Epilepsy	0	3
Low implantation, placenta	0	2
Fractured pelvis	0	1
Twins, locked heads	0	1
Carcinoma, cervix	1	1
Intestinal obstruction	0	1

Preëclampsia as an indication for section has definitely increased in our second series from 10 to 29 cases. The type of preëclampsia we deliver by section is the one which does not improve under conservative treatment, but instead is rapidly getting worse; in other words, it is the fulminating case. This type of case occurs most frequently in the primigravida. In the group of 29 cases thus treated in series

II, 25 were primigravida, 4 multigravida two of which had had a previous section for the same condition. Four other cases included under the indication of contracted pelvis in addition had preëclampsia.

Eclampsia as an indication for cesarean section has definitely dropped from 28 cases in series I to 6 cases in series II. As a matter of fact, we have now entirely eliminated eclampsia as an indication for the operation and treat this type of case by conservative methods.

Nephritic toxemia was not an indication in itself for cesarean section, but rather was employed for the purpose of sterilizing the patient at the same time. We are beginning to feel with Stander and Peckham that the patient with nephritis has her life shortened by each pregnancy; therefore, when a definite diagnosis of nephritis has been made she should not bear any more children. The two ways to prevent future pregnancies are for the woman to practice contraception or to be sterilized. In our clinic we have employed the operative method of sterilization only in those cases where the intelligence of the patient was too low or her ability to practice contraception was impossible. Thus, in the second series every case of nephritis sectioned was sterilized at the same time.

Abruptio placenta as an indication for section shows an increase from 3 cases in series I to 24 cases in series II. These 24 cases represent the more severe types of premature separation of the placenta; and it is in these cases that we feel the best results can be obtained by emptying the uterus in the quickest manner, and with the least trauma and shock to the patient. The cesarean section in our experience fulfills these conditions.

Mental deficiency in recent years has become an increased cause for section only for the purpose of sterilizing these patients at the time of operation. These patients are only subjected to this operation after a recommendation has been made by a competent psychiatrist.

Cardiac disease is an indication for section also when it is desirable to sterilize the patient because of a severe lesion, or when the strain of labor would be too severe a burden on the heart.

The rest of the indications represent the miscellaneous group. It does not appear that the elderly primigravida has become in our clinic an indication for section, since in both series only one such case was so delivered. It is interesting to note in passing that owing to the frequent automobile accidents the results of fractured pelvis may become an increasing cause for section. Also in case of twins it might be wise to have every such case x-rayed in order to pick up the occasional case in which the twins might become blocked or locked.

Placenta praevia, as already indicated, as an indication for employing cesarean section as the method of delivery has definitely increased in this clinic, as shown by the sharp increase from 13 cases in the first series to 102 cases in the second series. In table 2 are shown our results in 115 cases delivered by section. Our maternal mortality has been reduced to 0.87% and the fetal mortality to 26.5%. We definitely feel that cesarean section has a real place in the treatment of placenta praevia; and should be employed in those cases where the cervix is closed or only slightly dilated, where the patient has not been mishandled and infected, and after the patient has been prepared by blood transfusions or intravenous glucose solution. This procedure in our hands has given us the best results for the mother and at the same time has saved many more babies.

Sterilization: In series I, 14 such operations were performed; and in series II these had increased to 50. We wish to point out the fact that in all these cases; especially, in cardiac disease, chronic nephritis, mental deficiency, toxic chorea, tuberculosis, epilepsy and hernioplasty, the sections were performed only for the purpose of sterilizing the patient. In only one case did we have a death and that was due to pulmonary embolus. On the whole we do not feel that the additional operation of sterilization has increased the risk for the patient.

TABLE 2

Placenta previa

1920–33. Total number of cases, 115

TYPE OF SECTION		TYPE OF IMPLANTATION		FETAL MORTALITY		MATERNAL MORTALITY	
Classical	113	Central	31	Premature	26	Peritonitis	1
Low-cervical	1	Partial	28	Fullterm	6	0.87%	
Porro	1	Marginal	55	(26.5%)			
		Not noted	1				

In series I there were 25 cases that had had one or more previous sections; while in series II there were 56 cases. It is easy to understand why in series II the number of previous sections has increased from 25 to 56, since this represents some of the cases carried over from series I. It is interesting to note in this connection that we have been able to find in our records only two cases of cesarean section that have returned to our clinic with ruptured uteri. One case was a secundagravida with a spontaneous rupture at 24 weeks gestation. The other case was a para 3 whose first pregnancy was terminated by a section in 1926 for cephalo-pelvic disproportion; her second pregnancy ended in an abortion at 10 weeks; and her third pregnancy, after a short test of labor, was terminated by a second section at which time a beginning rupture of the uterus was found. This would give us an incidence for ruptured uterus following previous section of .39%.

TABLE 3

Maternal mortality

	SERIES I (1920–26)	SERIES II (1927–33)	
Total deaths	17		18
Total number of cases	183		335
Percentage mortality (gross)	9.3		5.4
Classical section (9.9%)	16	(4.0%)	10
Transfundal section	1		
Low cervical (8 cases)	0	(70 cases) 10%	7
Porro (2 cases)	0	(9 cases) 11%	1
Indications for sections:			
Contracted pelvis (79) 9%	7	(82 cases) 6%	5
Eclampsia (28 cases) 29%	8	(6 cases) 50%	3
Nephritis (3 cases) 33.3%	1	(14 cases)	0
Preëclampsia (10 cases)	0	(29 cases) (6.9%)	2
Cervical dystocia (1 case)	0	(11 cases) 18%	2
Mental deficiency (1 case)	0	(5 cases) 20%	1
Cephalo-pelvic disproportion (32 cases)	1	(37 cases)	1
Abruptio placenta (3 cases)	0	(24 cases) 8%	2
Dermoid cyst (obstructing)	0	(1 case)	1
Placenta previa (13 cases)	0	(104 cases) 0.96%	1
Causes of deaths:			
Infection (58.9%)	10	Peritonitis 7 Septicemia 1	44.4%
Anesthesia	1		
Shock	1	1	
Eclampsia (22.2%)	4	2 (11.1%)	
Nephritis	1	0	
Pneumonia	0	5 (28%)	
Pulmonary embolus	0	1	
P. P. Hemorrhage	0	1	
Placenta previa	0	0	

In table 3 the maternal mortality is analysed in the two series as to type of section performed, the indications for the sections and the causes of death. This is the gross mortality. Many interesting facts may be gleaned from this study. In the first series in 183 sections there were 17 deaths or a gross maternal mortality of 9.3%, which has been reduced in the second series, where 335 sections were performed with 18 deaths, to 5.4%. In series I, 16 deaths followed the classical section (9.9%) and in series II there were 10 deaths after the same type of operation (4.0%). This reduction in maternal mortality following the classical section has been accomplished by employing the low-cervical section in the cases that were in labor or potentially infected. However, our low-cervical sections show a high maternal mortality of 10%. The reason for this high mortality in the low-cervical section will be explained. In the face of this the use of the low-cervical section in the second series has definitely reduced our total mortality.

When we study this same table for the indications for these sections, we find that the greatest mortality occurs in the obstructive and toxemic groups. This is most likely due to the fact that most of our sections are done for obstructive reasons and since many of these cases are given a test of labor, they therefore, become greater risks. As for the toxemic group we definitely feel that cesarean section should not be performed in those patients who have eclampsia, and that they are better treated conservatively. Infection still remains the principle cause of death in both series, with eclampsia, pneumonia and shock following in their respective order.

In order to determine some of the reasons for the high mortality in our low-cervical sections, we have further analysed these cases in series II. Here we see that 54 out of the total of 70 cases were done in the negro; that the greatest number (61 cases) fell in the age groups between 14 and 29 yrs. 41 cases were primigravida; 65 cases were done for obstructive indications; all were clinic or unregistered cases; that all but 6 were in labor from 1 to 48 hours; that 35 had their membranes ruptured from 1 to 48 hours and 6 had questionable vaginal examinations. These cases, therefore, are our worst risks. No doubt some of these cases may have been better treated by Porro section, but in view of the fact that most of these cases occurred in primigravida we hesitated to doom them to childless existence. Since our hospital has a limited number of beds most of our moderately contracted pelvic cases are registered for home delivery by our students. For this reason many of these cases are allowed to remain in labor probably too long before they are sent to the hospital for delivery. This becomes physically necessary because of our limited beds and also because we are teaching students and must therefore be conservative. We have not yet reached the point, although scientific methods are increasing, where we can determine in advance which case will need an elective section and which one will deliver spontaneously. That of course would be the ideal method of handling pelvic dystocia cases, if we had exact methods. Consequently, we will be compelled to continue to employ the so-called test of labor with its attending risk and to reserve the low-cervical operation for these cases.

We find that in the classical section deaths only 2 cases were in labor, one for 8 hours and one for 25 hours. Yet 5 died of infection, 3 from pulmonary complications and 2 from eclampsia. In the low-cervical group 5 were in labor from 12 to 36 hours, 1 for 65 hours and 1 had had questionable vaginal examinations. The indications for the operation were chiefly obstructive and the cause of death was infection, pneumonia and shock. The one case that was in labor 65 hours might probably have had a Porro section, but she was a 14 year old primigravida and we did not feel justified in terminating her child-bearing career. All this emphasizes these facts; that neither the classical nor the low-cervical section can be looked upon with complacency; nor are they operations to be performed at random, but they demand the most careful kind of judgment to determine the type of case and the time when the operation is to be performed, and finally the selection of the proper anesthetic and the type of operation to be employed, if the mortality of the operation and its complications is to be reduced.

We studied the various complications that occurred both as to the type of operation, and as to the duration of labor. We have selected a labor of 12 hours as an arbitrary test of labor, although we know that a real test of labor is one in which the cervix is fully dilated, the membranes ruptured and the patient having good pains for 1 or 2 hours thereafter. The interesting finding is that in the classical section group, where most of the cases were not in labor, the greatest number of complications occurred in this group. This is another indication that the classical section done at the most favorable time is by all means not devoid of risk.

In analysing our morbidity we find that the gross morbidity for all cases in both series was 66%. This morbidity is based upon the finding of a temperature of 100.4° for two consecutive days. The morbidity for the classical sections was 60%, for the low-cervical sections 87% and for the Porro section 22%. Further our study points out the fact that in series II the negro shows a morbidity of 40%, while the white patients show only 20%. These facts which have a real bearing on our morbidity must be brought to your attention. Our maternity is a crowded one, we have no isolation facilities and our beds remain in constant use, so that our beds cannot be aired and sterilized frequently and remain what may be called "Hot." Since we know that the negro is a poorer risk, and since our clinic is predominantly negro, and that the general type of patient we have to deal with is of the lowest strata of our population, and because of our crowded conditions, this high morbidity is not an unexpected surprise.

The fetal mortality is shown to be for both series 15.1%; 6% in the full term babies and 9.1% for premature ones. The greatest number of fetal deaths occurs in abruptio placenta, placenta praevia and eclampsia. These outstanding causes of fetal deaths are expected, since these conditions predispose to asphyxia, prematurity and toxemia. On the whole the fetal mortality is not too high for these cases.

We have made no attempt to compare our results with those of others, for we feel that such a comparison depends upon many factors and so would tend to give one a false impression. Accordingly, the results of such studies by Danforth, DeLee, Greenhill, Seeley and others, as well as our own, depends upon such things as the type of patient, private or clinic; all white or all colored or a mixture of both; whether one performs more elective sections, or permits a test of labor and then employs the low-cervical section; whether the institution is a private or teaching one where one must teach and train the young men. All these facts and many others have a definite bearing upon the final results. We feel that in our clinic and hospital we have to deal with the least favorable type of patient, and consequently as a teaching institution our results cannot compare with a private institution, and of necessity must give a higher mortality and morbidity. We have recently opened the new University Hospital where we have a larger bed service with adequate facilities for isolation. This new hospital will enable us to admit more patients for better observation, care and delivery, and we believe this will materially aid in producing better results in the future.

We do not yet feel that we can divide our cases into two classes; one which will deliver spontaneously and the other which must be delivered by section. We have found that in many cases where we considered a section, the patients delivered spontaneously; and on the other hand, those that we judged would deliver spontaneously subsequently required a section. To cesareanise all such border line cases would mean the performing of too many unnecessary operations, and at the same time condemning these patients to a cesarean career with its increasing inherent risk in all their future pregnancies. Nor do we believe in the dictum of "once a cesarean, always a cesarean." We have seen too many of our cases disprove this belief. Our teaching in this matter is that every case is an individual problem and must be treated on its merits. That every section is a definite risk. That one must exercise his best care and judgment and employ the best technic to fit each case in order to obtain the best results.

CONCLUSIONS

1. We report our results in 518 cases of cesarean section.
2. Our clinic represents only the clinic type of case; 85% negroes.
3. Our maternity is essentially a pathological one.
4. The indications for sections have shown an increase for pre-eclampsia, placenta praevia, abruptio placenta and nephritis; and a decrease for eclampsia.
5. Cesarean section has a definite place in the treatment of placenta praevia.
6. Sterilization at the time of the section does not increase the risk for the patient.
7. Classical section should be restricted to the elective case.
8. Low-cervical and Porro sections should be employed in the potentially infected and infected cases respectively, including the cases that have been in labor.
9. The maternal mortality is definitely reduced by judicious use of these types of sections.
10. The maternal mortality is still too high.
11. Complications and morbidity are definite risks of the operation.
12. Fetal mortality is not too high after section.
13. Cesarean section carries with it a definite risk for the patient.

We should like to conclude with the words of George Gray Ward: "He who attempts to make nature deviate from her normal physiological processes may accomplish his immediate object; but it is very apt to be at an exorbitant price."

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DIVERTICULITIS OF THE CECUM

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Diverticula of the large bowel are not infrequent and as long as they remain uncomplicated they do not produce symptoms. The condition is termed diverticulosis. When an inflammatory reaction is set up in a diverticulum, because of fecal stasis, impaction of fecal matter in the diverticulum, or for other reasons, a definite clinical picture is produced, namely, diverticulitis.

Diverticula of the colon, as a rule, are multiple, but occasionally a solitary diverticulum is met with. The single diverticulum, when present, is encountered most frequently in the sigmoid (78%). It is rarest in the cecum, occurring with decreasing frequency from the left to the right side of the bowel. In 234 cases of solitary diverticula reported by Judd and Pollack, and by Masson, only 10 were in the cecum. Thomsen found only 8 cases of cecal diverticula in the medical literature. Romanis and Mitchiner go so far as to say that diverticulitis never occurs in the ascending colon. The records of Mercy Hospital reveal 3 such cases operated upon since 1920; those of Doctors Gardner and Wise, besides the writer's case which follows:

The patient was a housewife, 52 years of age, and obese. The past history was unessential. The menopause occurred at 46. The chief symptom was pain over the entire abdomen. It began a week previous to admission and eventually localized in the right side. The appetite was poor. The bowels were sluggish, necessitating the frequent use of laxatives, and an occasional purgative. She stated that her pain was relieved when she drew up her knees. She vomited first two days previous to admission, and occasionally afterward.

Physical examination revealed marked tenderness and some muscle resistance limited to the right iliac fossa. No masses could be felt. The liver and the spleen were not palpable. The rest of the physical examination was negative. The temperature on admission was 100 degrees F.; the pulse, 88. The white blood cells numbered 12,500; and the erythrocytes 4,740,000. The hemoglobin was estimated at 85 per cent. The serology was negative. The polynuclear ratio was 87 per cent.

The preoperative diagnosis was acute appendicitis.

Operation. Ether anesthesia. Right rectus incision. Upon opening the abdomen, a mass, the size of a hen's egg, was seen and felt on the medial border of the cecum, just above the ileocecal junction. It was surrounded by inflammatory tissue. The mass was of almost stony hardness, so much so, that I felt I was dealing

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with a carcinoma. Exploration revealed no other masses or other pathological condition. Resection of the cecum seemed the procedure of choice and this was done. An end to side anastomosis (end of ileum into the side of the ascending colon, with a precautionary ileostomy, completed the operation.

Gross pathology. Upon section of the mass, it was found to be a diverticulum containing an enterolith which was a complete mold of its lumen, and which was dislodged with difficulty. The mucosa was not ulcerated. The diverticulum itself was encased in indurated, inflamed fat.

Microscopic examination. The pathologist reported the condition to be a diverticulitis, with no evidence of malignancy. There was an inflammatory exudate in the thinned out muscular coat, and there was necrosis of the mucosa.

Post-operative course. Convalescence was somewhat prolonged as the enterostomy failed to close spontaneously, in spite of the fact that a pad of omentum was inserted between the ileum and the abdominal wall. The fistula was finally closed by suture under novocaine anesthesia. At the time of this report the woman is in excellent condition.

Whether diverticula are congenital or acquired is not clear. Thomsen states that the solitary diverticulum differs from the multiple diverticula in that it contains all of the coats of the intestine, whereas the latter consist only of mucosa and serosa.

Etiologically, they are either pulsion or traction diverticula, with the former confined chiefly to the large intestine and occurring mostly on the medial border just posterior to the anterior fibrous band, beginning at points where the vessels penetrate the intestinal wall. They begin as small bulges of the mucous membrane, and intracolonic pressure from constipation and muscular action complete the development of the diverticulum. The traction type is most commonly associated with the small intestine, and the pull on the bowel by the mesentery is the causative factor. This contention seems to be borne out by the fact that diverticula of the small gut occur uniformly at or a little above the mesenteric attachment.

Diverticulitis of the sigmoid is frequently diagnosed preoperatively, but the diagnosis is rarely, if ever, made when diverticulitis is present in the cecum. Here the usual preoperative diagnosis is that of appendicitis, and the true nature of the lesion is determined at operation. In some cases even then the diagnosis is obscure and it remains for the pathologist to determine the variety of the lesion. In the present case the exact condition was determined only after microscopic examination of the resected cecum.

The condition is most frequently met with in stout people, generally men past 45 years of age, and usually with a previous history of years of constipation, although McWhorter reported a case of cecal diverticulitis in a boy 19 years of age. Diverticulitis may pursue a chronic course, with inflammation spreading to the bowel wall. Eventually perforation into an attached viscus may occur or abscess formation result.

The operative treatment of cecal diverticulitis consists chiefly in removal of the inflamed diverticulum. Occasionally resection must be resorted to, either because of the location and size of the diverticulum, or the possibility of an existing malignancy. If resection is done, an enterostomy proximal to the anastomosis should be a part of the procedure, first to afford rest for the sutured gut, and mainly because these patients, as a rule, are not adequately prepared for such a formidable procedure. Decompression of the colon, vaccination against infection, etc. ordinarily cannot be carried out.

It might be well to emphasize the importance of exploration of the terminal ileum for diverticulitis in every operation wherein a preoperative diagnosis of appendicitis has been made and the condition of the appendix is not sufficient to explain the symptoms and the physical and laboratory findings.

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TAKE HEED TO YOUR WAYS

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Mr. President, Members of the Board of Instruction, relatives and friends of the graduating class, on behalf of the Senior students of the Medical Department of the University of Maryland, I welcome you to these pre-graduation exercises, but it is to the graduates themselves that I shall address what I have to say. For a brief period I shall step out of the familiar character in which you have known me and shall become first a historian, as far as the Medical School is concerned, and afterward a prophet in so far as it relates to yourselves and because of the interest and affection that I have for you I shall assume the rôle also of guide, philosopher and friend. I shall not go over the history of the early and middle portions of the record of the Medical Department of this University, but shall speak briefly of the last generation.

In the days just preceding the close of the last century this school had a famous Faculty of Physic, but the old order was changing and only a few read aright the handwriting on the wall. In those days medicine was taught by outstanding medical leaders who were great teachers also, but the instruction was entirely didactic and relatively little in the way of buildings and equipment were required. They followed the dictum of President Garfield, who said that all that was needed to make a good school was a log in a clearing in the woods with Mark Hopkins on one end of it and a bright boy on the other. Two great changes in medical teaching were gradually replacing these old methods.

The first of these was the stressing of pure science in the preparation of the student and the other was bedside teaching. Now these two things entirely revolutionized medicine. On the one hand laboratories and full time instruction were required and on the other, well equipped hospitals and dispensaries were essential. These factors sealed the doom of the private schools. Many of them had done a great work, but more and more schools were springing up and it was necessary to organize medical teaching and to bring into being some force that would regulate and discipline medical education; so that the Association of American Medical Colleges was created and the Committee of Medical Education of the American Medical Association called in as its ally the power of publicity. Almost before many teachers were

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aware of what was transpiring the whole fabric of medical instruction was changed. Not without bitterness, however, and not without harshness and some injustice also, but the clock had struck. "The old order changeth, giving place to new." Men are wont to tread in familiar paths and only the young and adventurous are in sympathy with Milton, who said "Ho, for green fields and pastures new."

Just before the turn of the century the Medical Department began to feel the need of change and a new hospital was built, now called the old hospital. Laboratories were set up and men began to specialize. Somewhat later the first small beginnings of an endowment fund got under way and the Faculty of Physic realizing that the old days were gone began to acquire property in the neighborhood. Somewhat later still, the standards were gradually raised as to admission and greater and greater care was taken to improve teaching. State Boards compelled better instruction, because schools were rated, then as now, partially on the record of its graduates before these Boards.

All of this brought about a great advance, but the road was strewn with wreckage. Endowed schools and state universities were taking over the teaching of medicine and within a few years about one-hundred medical schools went out of existence in this country.

There was in the Department of Medicine in these days a man who, first as Demonstrator of Anatomy, then as Professor of Anatomy and afterward as Professor of Surgery, saw all these things clearly and with rare courage, tenacity, intelligence and a stubborn will played the principal rôle in keeping the Medical Department in step with this progress and we are happy to see him here tonight, full of years and honor, a loyal and interested alumnus, Professor Emeritus of Surgery and one of the nestors of the medical profession in this country—Dr. Randolph Winslow.

These efforts made by the Medical School in the face of many difficulties comprise the first phase in the creation of the new University, which had behind it the tradition and record of a hundred years of continuous existence with a long roster of famous names on its list of instructors.

The next important act of the Medical Department was the part it played in merging a number of schools into one institution. First the Baltimore Medical College and afterward the College of Physicians and Surgeons became a part of this school and there was added to the list of instructors a large group of trained and well known teachers, some of whom have passed out of life, some are retired, but still cheer us on and many are active men and devoted teachers in the Medical Department today.

The third act in this drama, that is of very great interest to all of us who have been actors in it, was the creation of the State University in 1920. This was the result of the slow evolution that has been described, but it was a noteworthy accomplishment in Maryland for two reasons. First, because Maryland is a small state and it had been slow in the development of state consciousness, as far as education was concerned, and second, because state universities were not a part of the educational system of the Middle Atlantic and Eastern States.

Following this there was great improvement in equipment, increase in personnel and a quickening in morale in all departments of the University and last year the Medical School realized the fulfillment of a dream that years ago seemed nebulous and far away. This was the building and equipping of the New University Hospital and today, after years of work in the old hospital, many of us feel as we walk the wards and corridors of this new hospital that we are still dreaming.

The latest phase in this growth has only recently come to pass. By the terms of the will of the late Dr. Bressler the University has come into a splendid gift for medical research and every man, interested in the school, holds in grateful memory the name of the donor.

The Baltimore City Hospital, Mercy Hospital, Sydenham, the Hospital for Crippled Children and the University Hospital furnish a wealth of clinical material for teaching and the skill and devotion to duty of the scientific men in the preclinical years bring the student up to the hospitals in his junior and senior years well grounded in all those departments of Science that have changed the whole mental equipment of the modern doctor. In former years we were followers of Plato, who, in the realm of thought which is philosophy, was almost without a peer, but today, following somewhat reluctantly and with timid feet and looking back longingly toward the humanities, we are bound to say with Aristotle, that it is better to know than to think. It was Emerson who said "What is life but what a man is thinking of all day," but Emerson was a philosopher, a dweller in the realms of inductive reasoning, a sojourner in the peaceful shades of the garden of pure thought, and he would find himself in a strange country today, in the laboratories of the world, where every man is compelled to show his passport, written in the language of knowledge, which is science.

So much for the past, but what of the future? It is not the future of your Alma Mater that I wish to discuss with you, but your own future. What may you reasonably expect of the next forty or fifty years, which about represents your moving position in time and space, your fourth dimension? What is your experience likely to be? Now experience is made up of two things, environment and self—the interaction between these two. Let us think for a while of your environment. To begin with, the twenty-one years that have elapsed since 1914, which about corresponds to the years of your memory, have been without a parallel in the recorded history of this planet. Certain relatively small sections of the world and relatively limited strata of humanity have seen greater changes and have suffered greater hardships, but, during this short span of years mankind has been agonized by the greatest war in history, has seen many institutions and governments go down in ruins, has witnessed a greater upheaval in the economic, social and spiritual life of mankind than any other century has known. It must seem to many that the pessimistic statement of Carlyle is true—"All gone to dust and ashes in the wreck of time."

You have grown up in these awesome years and it is a wonderful proof of the elasticity, the hopefulness, the courage, the cheerfulness and the wholesomeness of youth, that you have come so well through a period that has broken the faith and courage and strength of many older men. But even that is now past and you are on the threshold of a great adventure, because there is only one adventure that equals the adventure of living and that is the adventure of the mystic's belief in immortality of which St. Paul was thinking when he said: "For I am persuaded that neither death, nor life, nor angels, nor principalities, nor powers, nor things present, nor things to come, nor height, nor depth, nor any other creature shall be able to separate us from the love of God."

So that in the midst of carnage, revolution, economic disaster and social unrest, surrounded by uncertainty and with many spiritual values apparently in ruins you are called upon to launch your bark and adventure forth in search of life and now there enters into the drama, a real sorrow and difficulty, because henceforth you must find your way alone.

Not the first mariners who sailed between the Pillars of Hercules nor Columbus leading his ship across unknown seas, nor Galileo when he first looked with some understanding into the awful depths of space, nor Pasteur seeing for the first time the cause of infection, nor Lister, nor Morton, nor Magellan, nor Sir John Franklin, nor Lindbergh, nor Drake, nor Peary, nor Einstein, nor DeSoto, nor Homer, nor Milton, nor James, nor Eddington, or any other adventurer into unknown realms of thought, or of science, or of geography, or of fancy, ever faced a future so full of uncertainty, as must you, in which the forces of order and of chaos are contending for the mastery of civilization. We are like those children of rich parents, who are desperately anxious to dissipate as fast as possible all the accumulations of their ancestors.

Unfortunately the human mass is so huge and unwieldy, so forgetful, so unintelligent, so prejudiced, so changeable, that relatively small groups of people however wise or thoughtful have very little ability to modify the trend of events.

So that, we return to the original question—what may you expect? I have spoken in a doleful manner of your environment and yet your cheerful and youthful faces tell me that your spirit is unafraid. And that is your chief chance of success and happiness for "the spirit of man is a great worker of miracles."

We come now to the other half of experience—self. In so far as you are masters of your fate what are you going to do with yourself, your ego, your divine spark of consciousness while it lasts? Are there any guide posts to direct you? Have any of the fine old customs and habits and beliefs been saved from the wreck? In short, of what are you going to build your character?

Dr. Eliott, the late President of Harvard University, when asked to name a text for the Library of Congress which best expressed the formation of character selected that fine passage from the prophet Micah "What doth the Lord require of thee?"

Each of us must answer this question very largely for himself.

In the main, "we must tread the wine press alone," but there are many old fashioned things, grown now very dim in these modern times, of which it may be profitable to speak. Old fashioned but fundamental truths, and in all the wanderings of the human race up and down after this new thing and that new thought there come times of partial sanity when mankind weary, disillusioned and sorely discouraged, returns again to the virtues of his fathers.

One of these old fashioned virtues is *service*, the impelling motive of all those who labor for the good of others. You remember in the Gospel according to St. Luke—"And behold a certain lawyer stood up and tempted him saying 'Master, what shall I do to inherit eternal life?' " and there follows that very remarkable and very brief treatise on ethics: the parable of the good Samaritan, which Christ concludes with the question "Which now of these three thinkest thou was neighbor unto him that fell among the thieves?" and He said "He that showed mercy on him."

Sir Andrew Macphail in his "Essay in Character" of Dr. John McCrae, he who wrote "In Flanders Fields" quotes Dr. McCrae on the last page but one of his little book—"What I spent I had: What I saved I lost: What I gave I have."

I am not quite sure but that the greatest of all human traits is dependability, and in an old play Lucifer is made to say "There is no steadfast man on earth." It is always the habit of the timid ones and the doubters to deny that the sons of men have any strong virtue in them. Steadfastness is not exactly the same thing as courage, but they are good companions and together will do much to see you safely along the road.

Tactfulness is a very essential thing in a physician, especially that negative tact which we call silence. "I said I will take heed to my ways, that I offend not in my tongue." "I will keep my mouth as it were with a bridle," and in Polonius' advice to his son he says, "Give every man thine ear, but few thy tongue." And again, "Still in thy right hand carry gentle peace, to silence envious tongues."

We read and hear a great deal about happiness. One of the definitions of life is the pursuit of happiness. If the good fairy of the story books of our childhood should appear suddenly before us and give us three wishes, it is fair to assume that almost all of us would ask for happiness as one of the three. And yet happiness is a vague and uncertain thing and for most of us dwells always in the next country. There are some who think that getting what you want is happiness. Perhaps it is if you can be contented also, but it is well to remember that "He gave them their hearts' desire, but sent leanness withal into their souls."

Cultivate the company of good books. Books give you fellowship with the immortal dead. They are the best of friends; the most tactful and thoughtful of companions. The divine spark burns brightly in only a few persons scattered here and there in the life of the race, and these have sometimes written down what they have seen and heard and thought, so that books may be for us like lighthouses in an otherwise uncharted sea. "There is no frigate like a book to bear us lands away." And yet it is well to remember that there are many things to learn that are not found in books. It was said long ago that of the making of many books there is no end, and much study is a weariness of the flesh. And one can still hear the voice of Ambroise Paré down the years—"See how I learned to treat gunshot wounds—not out of books."

I feel especially constrained to warn you against complacency. Satisfaction with ones own opinions and intolerance of the ideas of others is one of the most offensive of human traits. The world is full of people who are sure they are right; they will want to do your thinking for you, they will want to set up their standards of conduct for you to follow. Even the press is falling into this habit of telling us how to manage our lives. Individuals and newspapers alike are becoming common scolds.

The profession of medicine is an art as well as a science. Nowadays, we practice the science and are largely forgetting the art. To be accurate, to study the patient carefully, to exhaust every possibility of making a proper diagnosis, and then to use all agents at hand to bring about a cure—that is the science of medicine, and a right noble science it is, with many wonderful advances to its credit. But we are so interested in the science that we are neglecting the art: cheerfulness, gentleness, sympathy, thoughtfulness and kindness. These make up the art of our profession, so that the art of medicine lies in making the patient comfortable; to be able to smooth the pillow of those who are going down into the deep waters; to be interested in the individual; to be sympathetic; to make the lives of those entrusted to our care less painful, less confused, less unhappy.

We should try to build up gradually a sort of philosophy of living—a way of life. This may be as simple as the creed of the shepherd in "As You Like It." Plutarch says "Character is long-standing habit." Probably as good a habit as we can form is to live each day, with very little regret of the yesterdays and little concern for tomorrow. One may find authority for this in many sources. Christ said "Take ye no thought of the morrow." Shakespeare—"And all our yesterdays have lighted fools the way to dusty death." Our own Longfellow said, "Let the dead past bury its dead." George Herbert said "Undress your soul at night." Horace said, "Tomorrow do thy worst, for I have lived today." Dr. Osler said that "to look back is to risk the fate of Lot's wife"; and also, "If, to the regrets of yesterday and the fears of tomorrow, we add the cares of today, we make for ourselves a load that will bend the stoutest back." Dr. Johnson said "Our main business is not to see what lies dimly at a distance, but to do what lies clearly at hand."

When the day's work is finished, put it steadfastly behind you with its cares, its failures and its disappointments, especially with its dislikes. Nothing will so warp and dwarf you as remembering unpleasant things. Do not nourish dislikes. They seem small enough at first, but the habit of cultivating enmities is almost the worst of the many bad habits that harass us and drag us down.

"I had not time to hate because the grave would hinder me, and Life were not so ample I could finish enmity."

And now in conclusion, on behalf of your families, your relatives and your friends I congratulate you; for my associates I wish you every good thing, and for the profession as a whole I welcome you into the ranks of that great company of physicians of whom Robert Louis Stevenson said, "There are men and classes of men that stand above the common herd: the soldier, the sailor and the shepherd not infrequently; the artist rarely; rarer still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Heraclean cheerfulness and courage. So that he brings air and cheer into the sick room and often enough, though not so often as he wishes, brings healing."

BULLETIN

OF THE

SCHOOL OF MEDICINE, UNIVERSITY OF MARYLAND

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RESIGNATION OF PRESIDENT PEARSON

The resignation of Dr. Raymond Allen Pearson as President of the University of Maryland on Monday July 1, 1935, brings to a close an eventful period in the history of the University. Dr. Pearson came to the University at the invitation of the Regents in 1926, from Iowa where he had been President of The Iowa State College which largely through his efforts became one of the foremost institutions of higher learning emphasizing Agriculture and Mechanic Arts in association with General Science and Social Science with special reference to Rural Life. In coming to Maryland he had a similar field to cover in the branches of the University at College Park and in addition the executive duties of the State Board of Agriculture, Forestry and the Geological Survey and the professional schools of the University located at Baltimore, Medicine, Dentistry, Pharmacy, and Law.

During his presidency all of these agencies have advanced in efficiency and service to the State, buildings, grounds and equipment have been greatly increased and improved. The teaching staff has been largely maintained in the face of a decreasing budget and necessary salary adjustments to meet the emergency that has caused similar action in all institutions of higher and lower grades as well as in business generally. At the same time there has been a steady increase in the number of students to be provided for. It was a situation charged with almost insurmountable difficulties for the Legislature, the Board of Regents and the President. It is astonishing that so much progress was made in these difficult times by all branches of the University and its subsidiary activities. President Pearson has demonstrated his fine qualities in the manner in which he has met these difficulties, and in acceding to the judgment of the Regents when they decided that it was best to make a change in executive control.

Our best wishes go to Dr. Pearson in whatever work he may undertake in the future.

A glance over his record as given in Whose Who in America shows his outstanding accomplishments:– Born in Indiana April 9, 1873; Graduate Cornell University 1894; M.S. Cornell 1899; LL.D. Alfred University 1910; D.Agr. University of Nebraska 1917; Asst. Chief Dairy Division U. S. Department of Agriculture 1895–1902; General Manager Walker Gordon Laboratory New York and Philadelphia '02–'03; Prof. of Dairy Ind. Cornell University '03–'08; Commissioner of Agriculture New York State '08–'12; President Iowa State College, Agriculture and Mechanic Arts 1912–26; President of University of Maryland from September 1, 1926 to July 1, 1935; Assistant Secretary of Agriculture during the war emergency 1917–18; President of the Asso. Land Grant Colleges and Universities 1923, Chairman of the Executive Committee of the Association since 1919; Member of the A.A.A.S.; Chairman Division of States Relations National Research Council since 1926; member of many other important committees and organizations for the promotion of Agriculture, Science and Public Welfare, and author of many articles on these subjects in scientific and general literature.

A. F. WOODS.

Dr. Charles Emil Brack

DR. CHARLES EMIL BRACK

1866–1935

Dr. Brack was born October 19, 1866. He was the son of Charles Emil and Henrietta Brack (Nee Traulieb).

He received his early education at Zion Church School and Friends School, and for a time was a student at the Johns Hopkins University. He graduated from the Maryland College of Pharmacy in 1888, and received the degree of M.D. from the College of Physicians and Surgeons in 1895. Following his graduation he spent one year as interne at the Maryland Lying-in Asylum and one year at the Mercy Hospital.

His year at the "maternite" directed him into Obstetrics and his life work was in that specialty. For many years he was the Clinical Professor of Obstetrics in the University of Maryland School of Medicine and the College of Physicians and Surgeons. He was obstetrician-in-chief at Mercy Hospital, and was on the visiting staff of the University of Maryland Hospital and the Hospital for the Women of Maryland.

He was a member of the Medical and Chirurgical Faculty of Maryland, and was treasurer from 1921 to 1935. He was a Fellow of The American College of Surgeons, a member of the American Medical Association and of the Southern Medical Association.

During the World War he served as manager of the Students Army Training Corps.

In 1901 Dr. Brack married Mary A. Grob, by whom he had one son, Dr. Charles Bernard Brack now a house officer in the Johns Hopkins Hospital.

Dr. Brack contributed a considerable number of papers to the literature of medicine. Among these papers are "Review of the History of Obstetrics"; "Upright Position in Labor"; "White Cell Count during Labor and the Puerperium"; "Toxemia of Pregnancy."

Dr. Brack died April 4, 1935.

Dr. Melvin S. Rosenthal

DOCTOR MELVIN S. ROSENTHAL

1869–1935

Dr. Melvin Samuel Rosenthal, professor of dermatology in the University of Maryland died February 16th, 1935.

Dr. Rosenthal was born in Baltimore, August 12th, 1869, the son of Samuel and Emma Rosenthal.

After his preliminary education he entered the College of Physicians and Surgeons where he graduated in 1891. He was appointed assistant resident physician in the old City (now Mercy Hospital) after his graduation. He was resident physician in the Hebrew (now Sinai Hospital) from 1893 until 1897. During Mayor Malster's term of office he was assistant quarantine physician under the late Dr. John Ruhräh. Completing this duty he went abroad and studied his specialty in Berlin, Vienna and Paris. Two years later he returned and was made assistant professor of dermatology in the College of Physicians and Surgeons. When this School united with the Medical School of the University of Maryland, Dr. Rosenthal became assistant professor of dermatology in the new school. On the death of Dr. Caspar Gilchrist in 1929, he was made professor of dermatology in the University of Maryland.

Dr. Rosenthal was a member of the local and several National medical societies. His papers and practical discussions added much to the interest of their meetings.

Socially Dr. Rosenthal was a good companion. His wit and humor made him a valued member of any gathering. His many friends regret his death and his loss has made a void which it is impossible to fill.

Dr. John Mason Hundley, Jr.

DR. JOHN MASON HUNDLEY, JR.

The position of Professor of Gynecology of the University of Maryland Medical School was vacated by the resignation of Dr. William S. Gardner. Dr. Gardner will be missed by his many friends and students of the past years. It is entirely appropriate that Dr. Gardner's successor should be Dr. John Mason Hundley, Jr., because he has grown up with this Department, following in the footsteps of his well-known and much beloved father, the late Dr. John Mason Hundley, Sr.

Dr. Hundley was born in Baltimore, Maryland, July 8, 1891, the second child of the late Dr. John Mason Hundley, Sr., and Mrs. Helen Sweet Hundley, who resides at 11 East Chase Street. He gràduated from St. John's College in 1912 with the degree of Bachelor of Arts and returned in 1914 after two years study in the Johns Hopkins Medical School to receive the degree of Master of Arts. In 1916 he graduated from the John Hopkins Medical School, and from then until 1918, was House Physician to the Union Protestant Infirmary, leaving this institution to go over-seas with Mobile Operating Unit No. 1, until 1919. In 1920 he became Resident Gynecologist in the University Hospital under the tutelage of his illustrious father, thus beginning his connection with the department in which he has for many years been Associate and now becomes its Head. In addition to this, he has since 1925 been Instructor in Gynecology at the Johns Hopkins Medical School, and Dispensary Gynecologist to the Johns Hopkins Hospital.

While working in the Gynecological Department of the University of Maryland Medical School, Dr. Hundley has contributed many important advances. His broad vision led him to develop and equip in 1930 the Female Urological Clinic as a memorial to his father. He has been particularly active in re-organizing the Gynecological Dispensary and improving its facilities for teaching. In 1930 he and Grant E. Ward organized the first Oncological Clinic, formed as a definite unit of a hospital in the State of Maryland and these two men purchased the radium used in this Clinic. In this Oncological Clinic, Dr. Hundley has charge of the Gynecological tumor cases and Dr. Ward the general tumor cases.

In recent years, Dr. Hundley has enlarged upon his earlier education and experience by visiting at length several European clinics during 1931. While abroad he studied gynecological endocrinology in the Frauen Klinik of the University of Kiel under Prof. Robert Schröder and in the University of Berlin under Prof. Robert Meyer. Following this, he visited Dr. James Heyman of the Radium Hemet of Stockholm, Sweden, for a short course of study in Radium Therapy.

Since returning home he has continued his researches in gynecologcai endocrinology in collaboration with the Obstetrical and Roentgenological Departments of the University of Maryland and the Gynecological Department of the Johns Hopkins Medical School. As a result of two years work, he and his associates presented (by invitation) before the American Gynecological Society meeting at Hot Springs, Virginia, 1935, a paper entitled, "The Physiological Changes Occurring in the Urinary Tract during Pregnancy."

Besides these achievements, Dr. Hundley has been active in presenting papers before local and national societies and publishing articles in scientific journals. Only this year he has appeared before the Baltimore City Medical Society, Southern Society of Clinical Surgeons, Sectional meeting of American College of Surgeons, and the American Medical Association. At the latter meeting in Atlantic City he, together with others from the X-ray and Oncological Departments, exhibited results in the treatment of cancer.

Dr. Hundley belongs to a number of medical societies. In 1927, he became a Fellow of the American College of Surgeons and is a member of the American Urological Society, Southern Medical Association, Baltimore City and County Medical Societies, Medical and Chirurgical Faculty of the State of Maryland, and a Fellow of the American Medical Association.

In 1923 Dr. Hundley married Miss Emily Louise Holt of Charlotte, N. C., and they now reside at 204 Ridgewood Road, Roland Park.

Dr. Hundley with excellent background, education and training, together with large experience from clinical and private practice is especially well qualified for the position of Professor of Gynecology. His associations and contacts in many clinics throughout America and Europe and his ability for and interest in laboratory and scientific research increase his value to the University and especially to the Gynecological Department. All who are interested will welcome him to this well-earned promotion and wish him the best of success which he so justly deserves.

BOOK REVIEW

Cataract: Etiology and Treatment. By C. A. Clapp, Professor of Ophthalmology, School of Medicine, University of Maryland, Baltimore, Maryland. First Edition, Lea and Febiger.

A new and valuable book has been given to ophthalmologists by Dr. C. A. Clapp. It is a book on cataract and describes the lens from its development through to the mature cataract. It is the only work of its kind in English, and has two hundred and forty-four pages, consisting of a foreword by Dr. Wilmer and twenty-five chapters. The illustrations, and particularly the slit lamp photographs, are exceptionally good.

The book begins with an interesting description of the embryology and anatomical consideration of the lens. This portion of the book was written by Ida C. Mann F.R.C.S. of England. Miss Mann is considered an authority on the development of the eye and has contributed much to the literature on this subject.

The anatomy and physiology of the lens is then discussed. This is followed by a technical discussion of the chemistry of the normal and diseased lens, the various toxic agents and their specific characteristics; the congenital types of lenticular opacities and their treatment.

The secondary and complicated cataracts are then described. Next the various types of senile cataracts are discussed and classified.

For the surgeon, located in an industrial area, the chapter on traumatic cataract will be found most helpful.

The above work embraces a total of fourteen chapters. The remaining portion of the book deals with the treatment, both non-operative and operative.

A detailed description of the pre-operative technique is given and a choice of local anesthetics is left to the individual's preference but butyn seems to be the choice of the author.

Next the needling operations are described. Following this the combined cataract extraction operation is carefully described and clearly illustrated. This seems to be the operation of choice because of its safety and the good results obtained. The various intracapsular operations are mentioned also.

The post operative care and the treatment of the various complications are fully covered. The last chapter deals with the aphakic eye and its refraction.

The practitioner as well as the ophthalmologist will find this book a very valuable source for reference. It is clearly written and the style is very good. Dr. Clapp is to be complimented and congratulated on this work.

Thomas R. O'Rourk.

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The names listed above are officers for the term beginning July 1, 1935, and ending June 30, 1936.

SECOND ANNUAL LUNCHEON-MEETING OF MASSACHUSETTS ALUMNI

Sponsored by a Boston committee of three, the Massachusetts Alumni of the University of Maryland Medical School, Baltimore Medical College, and College of Physicians and Surgeons, met at a luncheon-meeting at the University Club, Boston, on June 4th. The occasion was the second day of the Annual Meeting of the Massachusetts Medical Society, in session at the Hotel Statler, Boston. Fifty of the slightly more than two hundred graduates in Massachusetts attended, an increase of one over the attendance of the get-together of last year in Worcester. The Boston Committee in charge was:

Charles W. Finnerty (P. & S. 1913), 395 Commonwealth Avenue.
E. B. Goodall (U. of M. 1909), 101 Bay State Road.
Benjamin Parvey (B. M. C. 1907), 636 Beacon Street.

Several of the men expressed themselves in favor of the Massachusetts group extending an invitation to the alumni in the remaining New England states to join them at the next luncheon-meeting, scheduled for early next June in Boston, again on the occasion of the annual meeting of the Massachusetts Medical Society. The secretary-treasurer was directed to take suitable steps to bring about such a reunion of New England alumni of the three schools. Individual contributions to the total of $45.00 were made toward the incidental expenses of the 1935 meeting and the 1936 function. The following officers were nominated, seconded, and elected by voice vote of the members present:

President: Thomas F. Tierney (B. M. C. 1901), Hudson.
Vice-Presidents: J. A. Barre (P. & S. 1892), Fall River (1555 Pleasant Street); J. J. Carroll (U. of M. 1905), Holyoke (192 Chestnut Street).
Secretary-Treasurer: Charles E. Gill (U. of M. 1927), Westfield State Sanitorium, Westfield, Mass.

The following graduates attended:

Drs. F. A. Robinson, Worthington, B. M. C. (1894); David G. Underwood, Hingham, B. M. C. (1894); R. C. Gwin, Brookline, B. M. C. (1895); B. A. Chapman, Springfield, Vermont, B. M. C. (1895); I. R. Calkins, Springfield, B. M. C. (1896); R. H. Morris, Everett, B. M. C. (1896); P. A. S. Grady, Clinton, B. M. C. (1897); John E. Walsh, Revere, B. M. C. (1898); H. A. Rosa, Fall River, B. M. C. (1899); George Webster, Southbridge, B. M. C. (1900); Thomas F. Tierney, Hudson, B. M. C. (1901); Michael H. Chrystal, Leominster, B. M. C. (1901); M. W. Harrington, Springfield, B. M. C. (1901); F. A. Edmunds, Woburn, B. M. C. (1903); George E. McPherson, Belchertown, B. M. C. (1904); Harry F. Byrnes, Springfield, B. M. C. (1904); C. J. Sukeris, Boston, B. M. C. (1905); L. F. Playse, Hopkinton, B. M. C. (1906); Harvey A. Kelly, Winthrop, B. M. C. (1906); A. E. Perron, Fall River, B. M. C. (1907); Constant Salitri, Lawrence, B. M. C. (1907); Benjamin Parvey, Boston, B. M. C. (1907); H. L. Rothblatt, Boston, B. M. C. (1908); G. A. Wilkins, Revere, B. M. C. (1908); C. S. J. MacNeil, Malden, B. M. C. (1909); Hanford Carvell, Gloucester, B. M. C. (1910); James B. O'Connor, Lowell, P. & S. (1892); Charles J. Walsh, Arlington, P. & S. (1892); A. C. Lewis, Fall River, P. & S. (1893); E. W. Barry, Whitinsville, P. & S. (1897); E. J. B. Sawabini, Brookline, P. & S. (1898); J. H. Kearney, Fitchburg, P. & S. (1898); John M. Leonard, Fall River, P. & S. (1900); M. H. Shea, Fall River, P. & S. (1900); Alfred Elliot, Middleboro, P. & S. (1900); S. M. Saltz, Boston, P. & S. (1904); J. A. Trainor, Cambridge, P. & S. (1904); John H. Weller, Bridgewater, P. & S. (1909); C. F. Berry, Boston, P. & S. (1910); C. W. Finnerty, Boston, P. & S. (1910); J. J. Carroll, Holyoke, U. of M. (1905); Lafayette Lake, Cambridge, U. of M. (1906); E. B. Goodall, Boston, U. of M. (1909); W. E. McClellen, Medfield, U. of M. (1914); A. B. Shoemaker, Boston, U. of M. (1908); W. J. Dillon, Springfield, U. of M. (1915); F. A. Reynolds, Athol, U. of M. (1921); V. A. Navarro, Medfield, U. of M. (1925); John E. Moran, Greenfield, U. of M. (1927); Charles E. Gill, Westfield, U. of M. (1927).

ITEMS

Dr. Thomas P. Murdock, Meriden, Conn., B. M. C., class of 1910, was elected president of the Connecticut State Medical Society at its annual meeting in May of this year.

Dr. Charles E. Gill, Westfield, Mass., class of 1927, is a member of the staff of the Westfield State Sanitorium.

Dr. W. B. Davidson, U. of M., class of 1917, is located at 36 Pleasant street, Worcester, Mass.

Dr. J. J. Carroll, U. of M., class of 1905, resides at 192 Chestnut street, Holyoke, Mass.

Dr. Edson E. Glidden, U. of M., class of 1907, is a member of the staff of the Worcester County Sanitorium, Worcester, Mass.

Dr. H. M. Robinson, Baltimore, Md., class of 1909, was the guest speaker at the meeting of the Guilford County Medical Society, held at High Point, N. C., September 5, 1935. On October 1, 1935, he opened the discussion on Dr. Henry Beerman's paper presented before the Pennsylvania State Medical Society at Harrisburg.

Dr. Lewis P. Gundry, Baltimore, Md., class of 1928, announces the removal of his offices to 1014 St. Paul Street. He limits his practice to internal medicine.

Dr. Herbert Schoenrich, Baltimore, Md., class of 1907, announces that although the death of Dr. Sylvan H. Likes has terminated a partnership of twenty-five years he will continue practice as heretofore at the same address, 1134 Linden Avenue. He limits his practice to diseases affecting the genito-urinary organs.

Dr. Richard C. Wells, class of 1867, aged 94, is probably the oldest living alumnus of the medical school. He resides at 4600 Park Heights Ave., Baltimore, Md.

Dr. Joseph A. Barre (P. & S. 1892), who resides and practises at 1555 Pleasant Street, Fall River, Massachusetts, has recently been reappointed Police Commissioner of that city by Governor James M. Curley.

Dr. Thomas F. Tierney (B. M. C. 1901), who resides and practises at Hudson, Massachusetts, is a member of the military staff of Governor James M. Curley and Surgeon-General of the Massachusetts National Guard.

Dr. Charles W. Finnerty (P. & S. 1913) of 395 Beacon Street, Boston, Massachusetts, has been made Physician-in-chief of the diabetic Clinic at the Carney Hospital, Boston. His practice is confined to internal medicine.

Dr. E. B. Goodall (U. of M. 1909) specializes in opthalmology at 101 Bay State Road, Boston, Massachusetts. He is on the staff of the Massachusetts Eye and Ear Infirmary, Boston.

Dr. Benjamin Parvey (B.M.C. 1907) practices obstetrics and gynecology at 636 Beacon Street, Boston, Massachusetts.

Dr. James B. O'Connor (P. & S. 1892) of 180 Fairmount Street, Lowell, Massachusetts, is Chief of staff of St. John's Hospital, that city.

The following alumni are members of the resident staff of the Medfield State Hospital, Medfield, Massachusetts: Dr. G. Allen Troxell (B. M. C. 1900), Dr. W. E. McLellan (U. of M. 1914), Dr. B. A. Navarro (U. of M. 1925).

WEDDING

Dr. Kermit Edward Osserman, Baltimore, Md., class of 1933, was married, June 2, 1935, to Miss Dorothy Selma Jacobs, daughter of Mr. and Mrs. Morris Jacobs, of Baltimore.

DEATHS

Allison, Karl Walter, Youngstown, Ohio; P. & S., class of 1911; aged 51; died, May 22, 1935 of cerebral hemorrhage.

Athey, Caleb N., Baltimore, Md.; class of 1894; formerly a member of the city health department, aged 67; died, August 11, 1935, of a lingering illness. He was born at Leesburg, Va. in 1868. Dr. Henry Athey, of Baltimore, class of 1911, is a brother.

Bailey, James Augustus, Harrisburg, Pa.; P. & S., class of 1895; aged 63; died, July 12, 1935, of angina pectoris.

Bartlett, Delancey Farnham, Fayetteville, N. Y.; B. M. C., class of 1897; also a pharmacist; aged 67; died, recently, of a lingering illness. Dr. Bartlett was a son of Mr. and Mrs. Delancey Bartlett. He received his preparatory education in Phillips-Andover Academy. Dr. Bartlett practised medicine in Solvay for a time, but thirty-five years ago returned to Fayetteville to enter the drug business with his father.

Baum, Julian C., Poplar Branch, N. C.; P. & S., class of 1894; member of the county board of education; aged 64; died, May 12, 1935, of cerebral and gastric hemorrhage.

Boyd, Charles L., Greenville, Tenn.; B. M. C., class of 1901; aged 58; died, June 19, 1935, of angina pectoris and hypertension.

Bressler, Frank C., Baltimore, Md.; P. & S., class of 1885; aged 75; died, May 18, 1935, of coronary thrombosis.

Bryer, Howard Barton, West Warwick, R. I.; class of 1909; formerly member of the state legislature, health officer and school physician; member of the examining board of the county during the World War; aged 54; died, May 23, 1935, of cirrhosis of the liver.

Burchinal, Lowry N., Point Marion, Pa.; class of 1886; at one time member of the school board and borough council; member of the Fayette County Medical Association; aged 73; died, June 11, 1935, of arteriosclerosis. Dr. Burchinal was born, January 26, 1862, in Arnettsville, W. Va. He attended public schools in

Logansport and Mannington, W. Va., and later taught there and at Grafton. On April 3, 1886, he married Miss Blanche Basnett of Mannington. The following notice concerning the death of Dr. Burchinal was copied from the Point Marion News of June 13, 1935.

> There's a great mound of flowers upon a new-made grave a-top the hill. This afternoon, all business was virtually suspended and the town gathered en masse to listen to the last rites and pay its respect to and to be stirred by the memories of a beloved figure who just before dawn on Tuesday morning last, June 11, 1935, answered the last call.
>
> There is scarcely a person in the entire sector, who hasn't been at one time and another the beneficiary of merciful ministration at the hands of "Doc" Burchinal, and not one person here whose heart isn't shaken over the sombre and oppressive memories of the long and devastating illness which preceded his passing.
>
> Day by day, and night by night, for a half-century he lived in saddle and auto, going about the country-side ministering unto the sick and the maimed. Until advanced age overtook him and a complication of ailments incidental to old age rode hard upon him. A community's grief immeasurably deepened because it couldn't return the thousands upon thousands of ministrations he had over the long years projected, so as to make his last years comfortable and free from illness, as he so richly deserved.
>
> By some strange quirk, the real measure and worth of a man's abilities and performances appear impossible of calculation until after he has come to the end of his earthly quest. Many and interesting incidents were there in the life of "Doc" Burchinal, some of which we shall doubtless write from time to time. For he was a leading citizen, a man of affairs, and a country town doctor whose ministrations will be lived over and over again in the hearts and minds here until the last member of the community's current generation sleeps his eternal sleep in a new-made grave a-top the hill.

The Morning Herald, Point Marion, June 13, 1935, carried the following editorial:

> Dr. L. N. Burchinal, who has just passed on, well beyond three score and ten years, was a country physician of the old school. Therein was vested a maximum of humanitarian service; a tribute to a life devoted to the calls for medical service without regard to time or place or elements; a life inextricably woven into the very fabric of a community which he served well and honored greatly and which revered and loved him.

Caffrey, Anthony Joseph, Milwaukee, Wis.; B. M. C., class of 1898; formerly assistant professor of medicine, Marquette University School of Medicine; aged 64; died, July 11, 1935, of cerebral hemorrhage.

Chew, Agnes Marshall, widow of the late professor Samuel C. Chew, died, June 5, 1935. She was the daughter of Alexander Marshall of Warrenton, Va. and a sister of Col. Charles Marshall, who served as military secretary to General Robert E. Lee in the Civil War.

Dial, William Hastings, Laurens, S. C.; class of 1884; formerly mayor; aged 75; died, June 1, 1935.

Fankhauser, Ernest Eugene, New Martinsville, W. Va.; B. M. C., class of 1902; formerly member of the town council; aged 61; died, May 31, 1935, of arteriosclerosis.

Garthwaite, Isaac Singleton, Santa Monica, Calif.; class of 1896; aged 70; died, May 18, 1935.

Grimes, Robert Lee, Urbana, Ohio; P. & S., class of 1890; aged 70; died, April 17, 1935, of carcinoma of the prostate gland.

Groff, Chester Chesterfield, Richmond Hill, N. Y.; B. M. C., class of 1904; served during the World War; aged 53; was found dead, May 31, 1935.

Hart, John Ellis, Wadesboro. N. C.; class of 1897; for many years a member of the state legislature; aged 59; died, April 7, 1935.

Hemeon, Fred C., aged 65, a practising physician in Dorchester, Mass., for the past thirty-five years died there after a long illness from heart disease. He was a native of Liverpool, Nova Scotia, a graduate in Arts from Acadia University and in medicine from Jefferson Medical College. He attended the College of Physicians and Surgeons for two sessions in the early nineties of the last century. The remains were taken to Liverpool where the burial took place on June 1, 1935.

Hewson, James Starr, Millburn, N. J.; P. & S., class of 1909; police surgeon and member of the board of health of Millburn; served during the World War; aged 68; died, July 8, 1935, of duodenal ulcer and pulmonary embolism.

Huckins, John Calvin, Plymouth, N. H.; B. M. C., class of 1904; aged 56; died, April 29, 1935 of a self-inflicted bullet wound.

Likes, Sylvan H., Baltimore, Md.; P. & S., class of 1893; member of the American Urological Association; fellow of the American College of Surgeons; aged 65, died, June 5, 1935, of chronic nephritis. He was the son of the late Henry Likes. After attending public schools and Deichman's University School of Baltimore, he graduated in medicine from the College of Physicians and Surgeons, following which he spent two years abroad attending clinics in Berlin, Vienna and Paris.

Linthicum, George Milton, Baltimore, Md.; P. & S., class of 1893; member of the House of Delegates of the American Medical Association; since 1913 professor of diseases of the rectum and colon in the School of Medicine, University of Maryland; formerly professor of physiology and proctology, Baltimore Medical College; past president and vice president of the Medical and Chirurgical Faculty of the State of Maryland; member and formerly vice president of the American Proctologic Society; fellow of the American College of Surgeons; an alumnus of St. Johns College; served during the World War; consultant to the city health department; aged 64; died, July 18, 1935, of cerebral hemorrhage.

Long, Clark Samuel, Lansdale, Pa.; class of 1916; for many years a member of the school board, aged 47; died, July 17, 1935, of cerebral thrombosis.

Mansfield, Arthur Dunning, Baltimore, Md., class of 1890; aged 68; died, July 27, 1935 of cerebral hemorrhage. He was the son of Dr. Richard W. Mansfield, class of 1865.

McCarthy, Daniel Joseph, Bridgeport, Conn.; P. & S., class of 1906; fellow of the American College of Surgeons; aged 52; died, April 23, 1935, of lobar pneumonia, chronic endocarditis and gastric ulcer.

McCullough, Carleton S. L., Steubensville, Ohio; class of 1923; served during the World War; aged 41; died, June 18, 1935, of coronary thrombosis.

Morgan, Elery Nichols, South New Berlin, N. Y.; B. M. C., class of 1897; aged 65; died, March 11, 1935, of chronic myocarditis and coronary embolism.

Morris, John Norfolk, Sykesville, Md.; class of 1893; aged 62; died, June 22, 1935, of peptic ulcer.

Mousley, Bayard Taylor, Walpole, N. H.; B. M. C., class of 1905; served during the World War; formerly a member of the state legislature and school board; health officer of Walpole; aged 56; died, May 30, 1935, of coronary thrombosis.

Perry, Paul Colson, Jacksonville, Fla.; P. & S., class of 1897; past president of the Florida Medical Association and the Duval County Medical Society; aged 60; died, June 5, 1935, of pulmonary embolism following an operation.

Phifer, Fred Wood, Wheatland, Wyo.; class of 1902; formerly secretary of the Platte County Medical Society; aged 58; was killed, May 31, 1935, in an automobile accident.

Poole, Richard Ernest, Veterans Home, Calif.; class of 1892; aged 68; died, June 13, 1935, of chronic myocarditis.

Sanger, Frank Dyer, Baltimore, Md.; P. & S., class of 1888; professor emeritis of rhinology and laryngology, University of Maryland, School of Medicine; fellow of the American College of Surgeons; aged 70; died, May 15, 1935.

Stearns Benjamin W. Unadilla, N. Y.; P. & S., class of 1892; University of Buffalo (1893); at one time health officer of Binghamton; aged 68; was killed May 23, 1935, when an automobile in which he was driving was struck by a train. Dr. Stearns was born at Damascas, Pa., December 12, 1866. He was the son of David W. and Gertrude (Pratt) Stearns. On June 8, 1892 he was married to Evelyn Bushnell. Following his graduation from Buffalo University he started practicing at Long Eddy. He remained there until 1899, when he moved to Binghamton. It was nine years later that he went to Unadilla and had practiced there for the past 27 years. He was a former president of the Academy of Medicine of Binghamton. The following tribute was paid the memory of Dr. Stearns by Benjamin Russell. It appeared in a local paper.

> The news passed quickly around our little town. The doctor was dead. Only yesterday he had been going about his usual rounds, bringing courage and confidence into stricken homes. Whether our illnesses had been trivial or great, we had looked to him with almost child-like trust; and somehow, with his pill case and his heartiness he had always justified our trust.
>
> Someone else would come, of course, to sit in his office and visit our homes when we were sick—someone, perhaps, with as much medical skill as the old doctor. But it would not be the same. I said something of the sort to the judge, who was the doctor's oldest friend. The judge now sat on the Supreme Bench, but he and his old friend, as young lawyer and young doctor, had come to the town together, years before.
>
> The judge nodded. "Medical skill is only half of it," he said. The doctor knew us. The only person in town whom he didn't thoroughly understand was . . . himself.
>
> "A few years ago I addressed the state medical society. I spoke on 'A Layman's Ideal of a Family Physician.' When I finished, one of our most distinguished surgeons came up to congratulate me.
>
> " 'Judge,' he said, 'you have described a man who represents all that is unselfish, noble and humanly great in our profession. But I doubt if such a man ever lived.'
>
> " 'Oh, yes, he does,' I said, and I nodded toward the doctor, down at the other end of the hall. 'I was describing that man.'
>
> "But the doctor," concluded the judge, "never suspected it."
>
> No, he had no room in his mind for self-righteousness. He lived for others. And the men who do that, whether they are doctors, lawyers, butchers, bakers or candlestick makers, are the men whose places on this earth can never be wholly filled.

Stephens Albert C., Barren Springs, Va.; class of 1894; aged 65; died, May 15, 1935, of angina pectoris.

Uberroth, Marion Wollaston, Tiffin, Ohio; P. & S., class of 1893; aged 63; died, July 7, 1935, of cardiac disease. Dr. Uberroth was born in Philadelphia, Pa., Jan. 18, 1872, son of Dr. Adams S., and Mollie (Wollaston) Uberroth. Being the son of a physician and later the step-son of a physician it was natural for him to incline toward the medical profession. He attended the common schools and Heidelberg College and was graduated from the College of Physicians and Surgeons, in 1893. He received his M.D. degree with high honors at the age of 21 years, and was the youngest member of his class. After the death of his father Dr. Adams S. Uberroth, he took over the practice of his step-father, the late Dr. William H. Focht, at New Riegel, and moved to Tiffin in 1906. He had pursued post graduate courses at the University of Chicago and Johns Hopkins Medical School in Baltimore. Dr. Uberroth was born of Scotch-Irish and French-Huguenot ancestry, and traced his lineage back through an unbroken line to Christopher Pennock of Cornwall, England, and Mary Collet, daughter of George Collet. of Clonmell, Ireland, who were united in marriage prior to the year 1675.

Ulrich, Marion, Millersburg, Pa.; P. & S., class of 1880; aged 83; died, April 22, 1935, of pneumonia superinduced by a fall.

Vincent, Waterman A., Three Mile Bay, N. Y.; P. & S., class of 1882; aged 78; died, July 18, 1935, of myocarditis.

Walls, Hansford L., Nitro, W. Va.; class of 1881; aged 73; died, March 11, 1935.

Weddell, James D., Tyro, Kansas; Washington University School of Medicine, class of 1872; aged 86; died, in May, 1935.

Withee, Frederick Elmarian, Newton, Mass.; P. & S., class of 1892; served during the World War; many years school physician; aged 70; died, June 29, 1935, of cardiac disease.

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MULTIPLE SCLEROSIS

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Multiple sclerosis a disease of the central nervous system, next to syphilis, is probably the most frequently encountered of the acute or subacute affections of the nervous system. About 75 per cent of the cases occur between the ages of 16 and 37. It may begin as early as the second year, and cases have been reported beginning as late as the sixth decade. The disease usually runs a subacute course although cases with acute onset are not uncommon. The average duration is from four to seven or eight years. There are cases on record that terminated fatally within seven months, and others that have lasted as long as 35 years. The disease is subject, with or without apparent cause, to remission and intermission. There may be a disappearance of all the symptoms, but usually the signs are permanent.

This disease manifests itself, at least during its earlier course, by disturbance of functions of the nervous system. There may be abnormalities of movement such as intention tremor, weakness, convulsions, spasticity, paresthesia, disturbance of vision; disturbance of the emotional and mental make-up such as euphoria, asthenic states, hallucinations and so forth. Not until the later stages do there occur paralysis, loss of sensation, blindness or deterioration.

The etiological factors responsible for the production of this disease have been the source of considerable discussion in the past twenty years. Byron Bramwell (1), in his study of 200 cases, states that in at least 100 cases there was no obvious cause for the disease, and proposes two theories as to the cause: (1) That sclerotic lesions are the

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result of some irritation which is distributed through nerve centers by the blood vessels. (2) That the disease is due to some developmental or congenital defect of the neuro-glial or nerve tissue which renders it more vulnerable or liable to be affected by irritation than is the neuroglial or nerve tissue of a normal individual. From his study of these 200 cases, it seems to him that the disease has its starting point with some acute febrile disease, trauma, exposure or other debilitating conditions.

From a practical standpoint, there are several tenable theories; first, that it is a degenerative disease that may or may not be associated with vascular abnormality; second, that it may be due to a toxine that has an especial affinity for or may disturb the fat metabolism of the neural elements; third, that it is an infectious disease due to an organism that as yet has not been discovered. Numerous theories as to the direct etiological factors have been described, and the literature contains abundant references to substantiate or disprove all of the assigned agents. J. B. Bucher (2) quotes Kuhn, Steiner and Siemerling 1917 as having demonstrated spirochaeta in the blood or nervous system of individuals affected with this disease; and Kuhn and Steiner (3) were able to transmit the disease from man to rabbits and guinea pigs, and then from these animals to others. Collins and Noguchi (4) have disproved the spirochaetal origin of this disease.

W. J. Adie (5) compares multiple sclerosis to acute disseminated encephalo-myelitis, and suggested that both of these diseases were probably due to a filterable virus that probably belonged to the same group of organisms. H. Marcus (6) reports a case which shows how multiple sclerosis and the various forms of encephalitis may apparently coalesce. The autopsy in this case revealed lesions suggesting multiple sclerosis as well as lesion showing perivascular cell infiltration. W. Russel Brain (7) and W. E. Guy (8) are also of the opinion that this disease is caused by a filterable virus. Tracey T. J. Putman, John B. McKenna and L. R. Morrison (9) have produced lesions similar to those of multiple sclerosis by the injection of tetanus toxine, by the production of embolism occasioned by the injection of cod liver oil emulsion, and they say it is not necessary to postulate a specific virus, toxine or ferment to account for the histological appearance seen in multiple sclerosis. R. M. Brickner (10) postulates a theory that there exists an abnormal lipolytic ferment in the blood which causes destruction of the myelin substance without materially affecting the axis cylinder. J. Purves-Stewart and F. D. M. Hocking (11) very definitely ascribe this disease to a filterable virus which they call the spherula insularis.

That the spherula insularis is not the etiological factor of this disease has completely been disproved by Halley Stewart (12), J. A. Braxton-Hicks and F. D. M. Hocking (13), Arthur Weil (14), and Julius Schuster (15).

From a study of the literature it seems to me that the opinion expressed by the commission which investigated multiple sclerosis for the Association for Research in the Nervous and Mental Diseases in 1921 (16) "if multiple sclerosis is a disease entity due to a single cause that acts in earlier life, it may be due to some specific infection; but the evidence available is strongly against its being caused by any of our well known infections, by any ordinary intoxication (organic and inorganic), by electric thermal or traumatic influences. If the exogenous factors mentioned play any rôle at all in the etiology of this disease, they must act either as a predisposing influence for the true cause or as aggravators of a disease already started by the true cause," correctly expresses the present conception of this disease.

In the course of my experience in treating multiple sclerosis, I have naturally been influenced by the published reports. In the cases first treated, every effort was made to find the focus of infection and remove the same if present. Rest, massage, diet were outlined and regulated; the best nursing care and continuous medical supervision were provided. The cases thus treated pursued the usual course of this disease; there occurred occasional remissions, death finally ensuing from inanition, respiratory disease or secondary infection. From 1920 until 1930 during which time the spirochaetal origin of the disease was so strongly suspected, patients were given the advantage of treatment with salvarsan, silver salvarsan and fever therapy induced by malaria. I believe that those patients receiving fever therapy with malaria were definitely rendered worse and the disease aggravated and death hastened. Those cases treated with the salvarsans were helped —probably the progress of the disease delayed, but in no instance was the disease arrested or the patient cured.

I. Gerhaud (17), in describing the treatment of 17 patients by hemolytic serum, i.e., serum made by injecting monkeys and rabbits with blood and cerebral spinal fluid from multiple sclerosis cases and then making serum from these monkeys and rabbits and injecting this serum into the affected individuals, states that in no cases were the results from this serum therapy definitely successful or lasting, that after two of three series of injections some patients showed new symptoms, and one patient grew much worse, and he concluded that this type of serum therapy had no specific action and was worthless.

Max H. Weinberg (18) reports the treatment of 12 cases of multiple sclerosis with lecithin. The therapy consisted of intraspinal injection of 0.2 cc. of the lecithin mixed with 4 cc. of warm normal salt solution diluted with equal amount of the patient's spinal fluid. Injections were repeated after 10 or 12 days until four injections were given. He reports the results attained were gratifying. Nine showed greater or lesser improvement. The method is harmless though complicated by headache and rising temperature. Weinberg, in addition to the intraspinal injection, had four of his patients take cod liver oil and quinine hydrochloride, and it seems possible to me that the quinine hydrochloride and cod liver oil could have been the agents that were helpful rather than the injection of the lecithin.

Richard M. Brickner (10) reports 40 tabulated cases; that in the majority of cases of not more than two years duration showed improvement. He recommends quinine, generally 5 grains of the hydrochloride three times daily and in cases which cannot stand these doses —smaller doses. It has been his experience that this treatment should be continued indefinitely. He further states that where there occurred inter-current, acute febrile illness, that in at least four of his cases a relapse occurred, but in spite of this, continued quinine treatment was followed by improvement returning to their former level in four to six weeks. The theory on which it is based does not point to a cure but only to continued relief.

Charles A. Neymann and S. L. Osborne discuss treatment by an electro-pyrexia stating that 44 per cent were much improved; 40 per cent improved to a lesser degree. These patients were observed from a few weeks to 18 months after treatment, and all remained stationary; there were no relapses. In this article they describe the method of producing fever and avoiding complications. They produced a quick rise to about 103° to 105°, treatment being applied biweekly. Four mild cases who could walk when admitted improved to a point where clinical diagnosis without history would be difficult. In 11 advanced cases two regained practically normal gait, others showed improvement. Four returned to work; 10 far advanced cases offer more or less hopeless prognosis. Two deaths occurred in this group.

Frederick S. Wetherwell (20) and Royle (21), on the basis that this disease was associated with vascular abnormalities and concurrent circulatory disturbance, as given by Putman (9), report cervico-dorsal sympathectomy as being followed by improvement especially affecting the speech, vision and intention tremor.

Since March, 1930, based upon the work of Purves-Stewart and others, I have treated, regularly supervised and followed 10 cases of multiple sclerosis. These are patients above the average of intelligence who had a thorough knowledge of the theory of the disease and who, after the theory of spherula insularis was disproven as the causative agent of multiple sclerosis, were not only willing but insisted upon the continuation of the treatment. Of these 10 cases, one, a man aged 43 whose illness had been of one year's duration of rather rapid progress, was treated according to the method of Purves-Stewart for a period of a little over a year, and who has been followed for four years. This man, who made a complete functional recovery, on examination still shows absence of abdominal and cremasteric reflexes and a suspicious Chaddock sign.

The second case, a young, single woman aged 22, a school teacher, complaining of numbness in the lower extremities and later on intention tremor, difficulty in walking, and so forth, had her first symptoms four years before treatment started. She had intermission of about a year or a year and a half, and then about two years after return of symptoms treatment was started. She was treated regularly for over two years, and for more than two years had no treatment. There has been a definite arrest of the progress of her illness—no new signs or symptoms have developed in the past two years; she is able to get around very well, has regained bladder control, and the intention tremor has practically disappeared.

A third case, a young, single woman aged 33 whose sister also had multiple sclerosis and who died several years before this patient developed multiple sclerosis, was ill three years before treatment was started. She was under treatment for a little over two years, has been under observation since her last treatment for three years. There has been an absolute arrest of her illness; she goes about normally, is able to supervise all her household responsibilities, and with the exception of some unsteadiness when she walks, considers herself well.

A fourth individual, a young man of 30 has been under treatment intermittently for the past four years. He had been ill for two years before treatment started, and he was rapidly getting worse; little or no control of the bladder, able to walk but a very short distance; he now has comparatively good control of his bladder, is able to attend his business in a normal manner.

A man aged 27 whose illness had existed about two years before starting treatment. In spite of treatment he had become progressively worse. A young woman aged 28 whose illness had existed for six years and who had treatment regularly for two years, has become progressively worse.

There were four other cases—three females and one male, whose ages were between 45 and 50, who had had multiple sclerosis for a number of years. One for 10 years; one for three years; one for five years and one for seven years. These were gradually progressive cases. They were under treatment for approximately two years; have been observed at intervals during the past three years. The progress of the disease has been practically arrested.

The treatment as administered to these 10 patients is as follows: The serum was prepared after the method of Purves-Stewart, i.e., 10 cc. of spinal fluid was allowed to flow directly into 10 cc. of Hartley's broth. To this was added 10 cc. of the serum of an individual, who as far as we could determine, was free from all disease. This mixture was incubated for seven days, then inactivated and a preservative added. One to 2 cc. of this serum was injected intravenously once each week.

Either as a result of this treatment or for some unknown reason, these 10 patients in the past five years have certainly done remarkably well. In the latter part of 1932, after the appearance of Dr. Brickner's article, these patients were also given quinine hydrochloride 3 to 5 grains two or three times a day. Throughout their treatment, their diet was rich in those foods which most abundantly supplied the vitamins A, B and D. They were also advised to take sun baths; and where this was not possible, were regularly exposed to the ultraviolet rays.

It is my opinion that an infective agent probably belonging to the group of filterable viruses is the direct cause of multiple sclerosis, and that trauma, exposure, meteorological conditions, acute infections, fever, toxemias, so forth, may be the exciting cause.

That there is no specific treatment, many agents or methods seem to be followed by temporary improvement or remissions which may last a short time or a very long time, or be followed by apparent cure.

The treatment at this time which offers the maximum hope of improvement and possibly arrest of this disease, is the use of vaccine prepared by incubating a mixture of spinal fluid of an affected individual, blood-serum from a normal person and Hartley's broth; then after an appropriate period, injecting small quantities (1 to 2 cc.) of this mixture intravenously once each week. This type of treatment may be helped by the administration of quinine hydrochloride in appropriate doses several times a day, and a diet rich in vitamins, rest and physiotherapy.

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SUBACUTE COMBINED DEGENERATION (SCLEROSIS) OF THE SPINAL CORD

Further Data upon a Case Originally Reported in March, 1928

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This case was first reported in March, 1928 (1) as showing improvement in the neurological manifestations of Addison's Syndrome in the face of uniformly adverse reports from all observers previous to that date. This included the originators of the clinical use of liver in pernicious anemia, namely, Murphy and Minot. Subsequent to this original report many articles appeared in the literature some of which denied the benefits claimed, a few going so far as to say that the diet was not only without merit in the neurological cases but reporting cases that developed in spite of liver therapy (2).

Previous to my report, Koessler and Maurer (3) reported improvement in pernicious anemia with a diet that approximated the Murphy and Minot regimen. More important, however, was their statement the the central nervous system manifestations were favorably influenced in three cases. They ascribed the improvement to the adequate amount of vitamin B contained in the diet and likened the nervous involvement to a vitamin B deficiency. This has not, of course, been borne out by subsequent study of the diet.

Mason, later in 1928 (4), reported a case treated in this manner stating that, "During the past year there has been subjective and objective improvement in the spinal cord lesions."

Sturgis et al. (5), using Minot-Cohen alcohol-ether insoluble, water soluble liver extract fraction G, were able to obtain a very moderate improvement in the central nervous system symptoms if they combined with this suitable measures of physiotherapy tending to strengthen the weakened muscles. Their study included 28 cases of pernicious anemia some of which showed cord changes. They mention that tingling of the fingers and toes, when present, was not benefited by the diet.

In a report of two cases Beall (6) obtained excellent results in both the subjective and objective symptoms of nervous system involvement, whereas Cohen (2) reported most pessimistically upon the use of liver in one case which showed aggravation of nervous symptoms during a remission of the blood findings.

From an exceptionally careful and complete study of sixty-one cases of subacute combined degeneration, thirty of which were treated with liver diet, Ungley and Suzman (7) concluded amongst other things, that liver therapy is of definite value in this condition; the degree and rapidity of improvement depend largely upon the amount of liver taken; remission is only maintained if the liver diet is maintained; the earlier the stage of the disease in which treatment is started the better the results and in the later stages the presence of serious complications may render the therapy useless.

Claiming that diathermy was efficacious in a case of this type following failure in the use of liver, Davis (8) strongly recommended the former treatment in these cases.

Fried (9) in a pathological review of the condition calls attention to the fact that pernicious anemia is an entity involving both the hematopoietic and the central nervous systems. He also states that a pathological study of 150 cases of pernicious anemia at the Mayo Clinic by Waltman, revealed involvement of the nervous system in 80.6 per cent of the cases; quite advanced cord lesions may give no signs of their presence clinically except by the occurrence of slight, undetected acroparesthesias. Carefully discussing the pathological changes occurring in the nervous system, he shows that there is actual destruction of the myelin sheaths and also of the axis cylinders with replacement of the parenchymatous cells by glial scar tissue. In summarizing he states, "The serious character of the lesion of the spinal cord in pernicious anemia and the peculiarities of tissue repair in the central nervous system render impossible a cure of the spinal cord symptoms under the influence of the liver diet. In view of the nature of the lesion, likewise, one may not expect great improvement in the nervous symptoms even though the anemia has disappeared, and it is remarkable that any functional improvement at all should occur."

Couzon (10) in further discussing a case reported by him sometime before, states that his case had not shown any great degree of improvement but had definitely ceased to advance in severity. He takes issue with Dereux, whom he quotes as considering the advance of the neurological symptoms as inexorable even though the blood changes may have improved; he concludes, rather, that the liver therapy will stay the course of the nervous system manifestations but will not cause them to regress favorably.

Later in 1929, Ungley and Suzman made a further exhaustive report of their material, (11). They particularly stress the necessity of having definite diagnostic criteria present in making a diagnosis of subacute combined degeneration. According to them, incoördination and ataxia are definite signs of posterior column involvement while a positive Babinski sign, with or without exaggeration of the deep reflexes or ankle clonus are evidence of pyramidal tract involvement. Numbness and tingling, slight degrees of anesthesia, loss of knee kicks and ankle clonus are not to be regarded in themselves as sufficient evidence to warrant a diagnosis of subacute combined degeneration.

After a discussion of their material from the standpoint of nervous system signs present before treatment, together with the effect of liver therapy upon their persistence, they tabulated their cases as to final results. It is interesting to note for purposes of comparison, that of the thirty-one cases untreated, three were either unimproved or worse while twenty-eight died.

Of the thirty treated cases, seventeen were improved with eight of them back at their usual occupation; of the eight cases listed as unimproved or worse, all of them had stopped taking the liver contrary to instructions; of the five fatal terminations, four presented serious complications, as severe infections, and all of them took inadequate quantities of liver.

They concluded that the spinal cord changes are not simply a result of the lowered blood count as they occur in the absence of blood findings of pernicious anemia; the blood count may be high on moderate amounts of liver without improvement in the spinal cord symptoms; there may be improvement in the spinal cord symptoms with a blood count as low as 2 million; cessation or diminution may cause a recurrence of the anemia without appreciable effect upon the nervous symptoms. In view of the foregoing facts, they feel that the cord changes represent a specific phenomenon and are not secondary to the blood changes.

Farquharson and Graham (12), in a very exhaustive study of a series of fifty cases of pernicious anemia, 18 of which exhibited definite evidences of subacute combined degeneration of the spinal cord, concluded that liver therapy exerts a very beneficial effect in these latter cases. When it is instituted before evidences of cord change have appeared, it will prevent their occurrence, and when they are present it will arrest their progress and cause marked improvement in many cases. This improvement will occur not only in the cases exhibiting tabetic symptoms but also in those showing evidence of pyramidal tract change.

Davison (13), after noting the fact that reports of good results from liver therapy in subacute combined degeneration had appeared in the literature, gives the results of his histopathological studies in seven cases. He states that the changes occurring in the myelin sheaths and the axis cylinders of treated cases differed in no way from those observed in untreated cases; the only noteworthy effect from liver was seen in the glia. This tissue showed changes paralleling those found in the myelin sheaths and axis cylinders of untreated cases but in the treated cases, the glia showed definite proliferation. He states that the only effect the liver may have on the myelin sheaths and the axis cylinders is to arrest the further destruction of these elements. One might mention here, parenthetically, that this would seem to be an effect of some importance, clinically.

From the foregoing, it may be seen that while there is some division of opinion regarding the value of liver therapy in subacute combined degeneration of the spinal cord, the preponderance of opinion seems to be that definite benefit may be obtained and the treatment offers considerable hope of arrest, and even marked improvement, in this hitherto utterly hopeless condition. Thus, the findings first reported by me in the case which will be discussed would seem to have been borne out by subsequent experience even though many of the writers immediately following the original report denied the possibility of benefit in these cases from this type of therapy.

The universal experience seems to have been that the tabetic symptoms are most benefited but that there is definite improvement observed many times in the pyramidal tract signs and symptoms.

CASE REPORT

(Abstract of previous report covering progress from onset, in December 1922 until April 1927)

G. S., a white male, age 45 years, came to the dispensary of the University Hospital, March 1, 1923, complaining of "stomach trouble, numbness and tingling of both hands and general weakness." Beginning in August of the previous year he had steadily lost weight up to the time of admission. At that time he had also noticed that he was becoming hyperexcitable and irritable.

In February, 1923, he began to experience periodically, numbness and tingling in both hands starting at the wrist and involving the entire extremity distal thereto. There was a total loss of sensation with inability to appreciate either the presence or number of objects in his hands; the surfaces were numb.

He also complained of the usual gastro-intestinal symptoms found in pernicious anemia as "fullness in the stomach," gnawing pain in the epigastrium unaffected by foods, anorexia and constipation. Palpitation upon exercise was the only cardiovascular manifestation. The physical examination and laboratory findings were those typical of pernicious anemia; hemoglobin 44 per cent; a red cell total count of 1,900,000 giving a color index of 1.2; and a lack of free hydrochloric acid in the gastric juice.

His course was that of a "pre-liver" case of pernicious anemia showing the usual remissions and relapses and involving the periodic use of the procedure of blood transfusion. There was practically no change in the neurological manifestations

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until he was admitted to the Maryland General Hospital in October 1926, because of a relapse, with blood findings of 2,390,000 red blood cells, and a hemoglobin percentage of 55. A blood transfusion was performed with immediate improvement in the blood picture, the hemoglobin rising to 73 per cent.

Upon returning to the dispensary, he complained that he had experienced a marked reaction from the transfusion as evidenced by definite increase in the tingling sensation in the legs, and a drunken gait that was quite embarrassing to him. Examination revealed hyperesthesia of the right thigh, pain in the left foot, absent knee kicks, ataxia and a positive Rhomberg sign. Owing to an unfortunate oversight, the vibratory sense was not tested.

He grew progressively worse and in January, 1926, he showed definite mental change as depression, loss of memory, irritability and definite diminution in visual acuity.

A rather inadequate liver diet was started in April, 1926, and a complete Murphy-Minot regimen was instituted in August with the usual striking improvement in blood findings and general health of the patient. The patient was seen again in October and was found in excellent condition generally and was working steadily. Ataxia, with eyes open, had almost disappeared; Rhomberg's sign was still strongly positive; the knee kicks seemed to be returning.

His course continued to be satisfactory and in April, 1927, he was referred to the neurological department for examination. Their findings were: gait undisturbed; muscle power, tone and development good; abdominal and cremasteric reflexes absent; plantar stimulation caused plantar flexion of the toes with retraction of the extremity. The knee kicks were very active, bilaterally and the triceps and biceps reflexes were present. The achilles and hamstring reflexes were absent. Coördination in the upper and lower extremities was good, Rhomberg's sign was negative and the diadokokinetic test was normal.

Vibratory stimuli unperceived over any bony prominence of the lower extremities. There was interference with the muscle sense in the toes. Tactile, pain and temperature sense were everywhere normal. Examination of the cranial nerves was negative and there were no abnormal vasomotor or trophic manifestations.

The patient complained of a numb, tingling sensation in both feet and of some slight difficulty in vesical control.

From April, 1927, until November 12, 1933, when the final neurological examination was made, the patient continued at work and except for minor set backs, due to failure to take the liver extract and to an occasional common cold, did well.

Neurological examination

The patient is attentive, emotionally stable and displays a good memory. He is inclined to be talkative.

Examination of the cranial nerves reveals no abnormalities with the exception of a slight tremor of the tongue.

Examination of the motor functions of the head, upper extremities, trunk and lower extremities revealed no abnormalities.

The reflex responses were varied; of the superficial, the corneal, and the palatal were normal while the abdominal and epigastric were absent; Babinski's sign was positive. The deep reflexes deviated from normal in that those at the jaw, wrist and elbow were hyperactive while the knee kicks and ankle reflexes were absent. There was no ankle clonus.

Micturition was normal, without retention or incontinence.

Investigation of the sensory status revealed the absence of subjective pains or unusual headaches. Sensibility to touch, pain, temperature, vibration and deep pressure was normal as was the stereognostic sense. The lower extremities, distal to the ankles, were subject to tingling and numbness. Except for those in the right large toe, the joints revealed a normal sense of position.

There was no evidence of derangement of the trophic function or of the vegetative nervous system.

Questioning revealed the fact that his feet became easily cramped upon walking. He also told of occasional numbness and tingling in his right hand.

His blood picture at this time was as follows: Hemoglobin, 87 per cent (Dare); red blood cells, 4,872,000; white blood cells, 7600; numerous platelets. The differential count was normal.

Comparison of neurological findings

	FEBRUARY, 1923, TO OCTOBER 1925	APRIL, 1927	AUGUST, 1927	NOVEMBER, 1933
Motor	Ataxia 4— Tongue, slight tremor, deviation to left	Ataxia absent Gait normal	Rhomberg negative	Gait good Tongue, slight tremor, protrudes in midline Coordination good
Reflexes superficial		Cremasteric absent Abdominal absent Plantar Babinski negative		Corneal present Palatal present Epigastric absent Abdominal absent Plantar Babinski positive
Deep	Knee kicks absent	Elbow very active Knee kicks very active Achilles and Hamstring absent	Knee kicks less exaggerated	Jaw hyperactive Wrist hyperactive Elbow hyperactive Knee reflexes absent Ankle reflex absent (?) Ankle clonus abent
Organic		Incontinence, slight		Micturition normal Retention none Incontinence none

Comparison of neurological findings—Concluded

	FEBRUARY, 1923, TO OCTOBER 1925	AHRIL, 1927	AUGUST, 1927	NOVEMBER, 1933
Sensory status	Pain left foot Tingling and numbness of hands and feet Astereognosis	Tactile, pain temperature normal Tingling numbness of both feet Vibratory not perceived	Upper extremities normal Tingling numbness both feet, better	Subjective: Pain, none; headache, occasional; tingling and numbness up to ankles Sense of pain, touch, temperature, vibratory and deep pressure normal Stereognostic sense normal Sense of joint position good *except* in right large toe
Trophic		Not disturbed		Not disturbed
Vegetative				Cold sensitive, otherwise negative
Additional		Vasomotor none		Feet cramp easily on walking Numbness and tingling right hand, occasional
Emotional and mental status	Greatly depressed Memory poor Mental processes at a low level		Much improved	Greatly improved Tension good Emotionally stable Memory satisfactory

DISCUSSION

In view of the fact that this was the first case of subacute combined degeneration to be reported as showing improvement upon liver therapy, it was felt that a more recent summary of his condition would be interesting.

Examination of the chart showing neurological findings at different dates reveals interesting changes in his condition. The outstanding manifestation of improvement is the disappearance of the marked ataxia present early in the course of the neurological condition. The man has changed from an individual who was unable to walk without a great deal of assistance, to a perfectly competent person without significant interference with his gait. Change in the sensory findings, such as a decrease in the tingling and numbness of the feet, with practically a total disappearance of these symptoms of the hands, has added greatly to the comfort of the patient. Astereognosis, which was present at the time of the first examination, has also disappeared, and he is able to clearly perceive the size and shape of objects at this time. Incontinence, which was noted in 1927, has also entirely cleared up.

When we come to evaluating the improvement in the motor functions we find that it is not nearly so satisfactory, as the absence of certain reflexes has persisted and Babinski's sign has remained positive.

It is impossible to omit reference to the great improvement emotionally and intellectually displayed by the patient. He has changed from a depressed, apathetic, irritable invalid to an emotionally stable, alert and competent individual.

CONCLUSION

First, the course of this case appears to bear out the generally accepted conception of the results of liver therapy in subacute combined degeneration. He shows marked posterior column improvement, with a much less degree of improvement in the motor functions. Not only has there been definite improvement, but it would seem that the progress of the symptoms has been satisfactorily stopped.

Secondly, the value of this treatment cannot be properly assayed by a purely objective examination, even though certain evidences of central nervous system damage have persisted. The change in the man's general condition with consequent improvement in his mental and physical efficiency has been so great as to make it difficult to understand the occasional statement in the literature to the effect that liver therapy is without value in this condition.

The recent dogmatic statement by Minot (14), to the effect that "early diagnosis followed by adequate treatment can entirely prevent the appearance of more than slight degrees of subacute combined degeneration of the spinal cord because adequate treatment certainly can prevent the development or advancement of this most distressing condition," would seem to be justified.

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INFECTION OF THE PARA-NASAL SINUSES IN CHILDREN

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Frequent colds associated with nasal discharge generally mean infection of some of the accessory sinuses. It is now generally recognized that a so called "common cold" which does not clear up in two weeks time has become complicated by invasion into some of the sinuses and if left untreated will result in serious disease. This is particularly true in infants and young children, for we know that the constantly "running" nose in a child demands definite attention if the child's future health and development be given the serious consideration it deserves. Children with infected sinuses are irritable, anaemic, undernourished and present all the symptoms associated with an active focus of infection. Furthermore, such infections retard the development of the sinuses themselves so that a condition is left for the continuance of a chronic disease which might have been prevented if early treatment had been instituted.

It is a common practice to attribute all chronic colds and all cases with nasal discharge, regardless of location, character or amount of secretion, to diseases of the tonsils and adenoids. It is often taken for granted that this is the only factor to be considered, while in fact the true source of the infection may be in the paranasal sinuses. The importance of investigating this field is impressed upon us when we frequently encounter children who have had their tonsils and adenoids removed, but who do not get the desired relief of their symptoms. They give a history of colds being as frequent and the nasal discharge as constant and as severe as before operation. The operation is frequently considered as an unjustifiable procedure, the results being unsatisfactory to the patient and embarrassing to the surgeon. A situation of this kind can be avoided if more attention is paid to the sinuses before the tonsils and adenoids are removed. In all cases of children with inflammatory lesions around the nose and throat, where the nasal symptoms predominate, the sinuses should be examined. Where there is a great deal of sneezing, congestion of the turbinates, constant colds with thick profuse nasal discharge, a careful investigation of the sinuses is called for. If the diagnosis is correctly made, treatment can be properly instituted and the results will be satisfactory.

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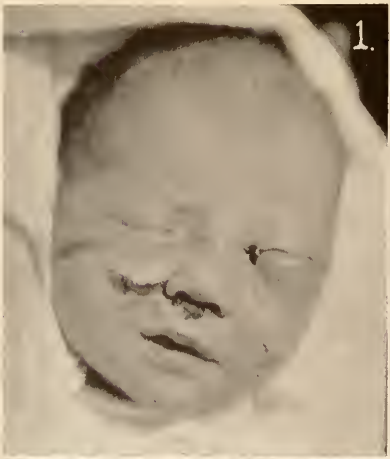
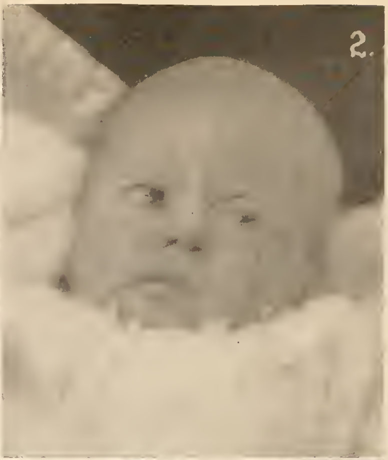
While children are not as susceptible to diseases of the sinuses as adults, the condition is frequent enough to require careful consideration. In fact, the subject requires more attention than is generally given to it by rhinologists. Haike (1) made an autopsy study of 394 cases of children. He opened the sinuses of 62 cases and found 52 of this number diseased. The ages were from nine months to thirteen years. Forty-seven cases had an infection of the maxillary antrum, two of the sphenoids and three had an involvement of the ethmoid cells. Dean and Armstrong (2) investigated the sinuses in a group of children presenting the common symptoms of infected tonsils and adenoids. One hundred and forty-five cases were examined, and of this number 65 showed some definite involvement of the sinuses. In a similar group of cases White (3) made x-ray studies of 50 children who had been admitted to the Hospital for tonsillectomy and adenoidectomy and out of the 50 cases 41 showed pathologic sinuses.

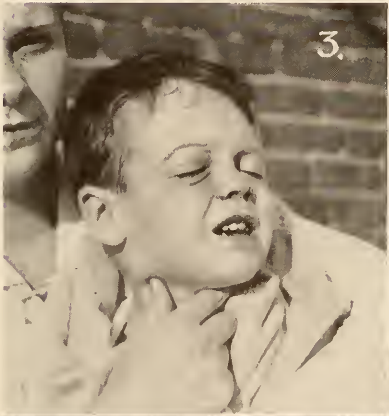
Apparently one reason why this condition is not suspected more frequently is because there is still a prevalent opinion that the sinuses in children are so undeveloped that they do not play an important part in the etiology of early nasal infections. In an effort to clarify this misconception, I will briefly mention our present knowledge of the anatomic construction of the sinuses in infants and children. Considerable work along this line has been accomplished by Onodi (4) who has made an extensive anatomic study of 102 skulls. The material was obtained from fetuses six and a half to eight months, from the newborn, and from children one to nineteen years of age. Since his work, our knowledge of this subject has been further supplemented by the valuable investigations of Davis (5) and more recently by the contributions of Schaeffer (6). The general opinion is that the frontal sinus makes its appearance from the end of the first year to the beginning of the third year (7). It develops slowly and is about the size of a pea between the sixth and seventh year. From the seventh to the ninth year it is recognized as a distinct cavity. The maximum development is reached during the nineteenth year, when it measures from 16 to 21 mm. in height and from 21 to 24 mm. in width (8). The sphenoid sinus is merely a faint depression in the body of the sphenoid bone at birth. Its real development begins at the end of the fourth month and generally increases in size until the sixteenth year. The ethmoid cells are present in the newborn, as shown by Curran (9) who dissected fetuses from three and one-half months to birth. They develop in size with advancing years until puberty. The maxillary antrum is most frequently infected in the child, as it has the earliest and greatest development. According to Gegenbaur (10), "The first rudiment of the maxillary antrum is the first to appear, being seen even before the middle of fetal life, but it does not attain its complete development until comparatively late, nor does it show any considerable growth before the second year of childhood." At birth it occupies a small space to the inner side of the orbit (11). The subsequent development is downward, assuming its full shape after the eruption of the permanent teeth. The maximum development is attained between the fifteenth and eighteenth years. So we find the maxillary antra and ethmoid cells present at birth, while the frontals and sphenoids make their appearance before the third year. Therefore from an anatomic standpoint the sinuses in early life are sufficiently developed to be taken into consideration in pathologic processes. It is true that the sinuses in children are not always perfectly developed, for even in the adult we know of no structure in the human body which is subject to such wide variations in size, structure, location and development as the accessory sinuses.

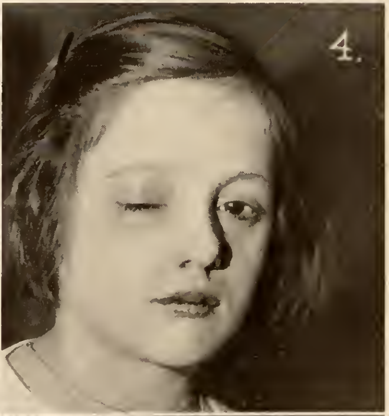
In the early years of childhood the upper respiratory tract is particularly susceptible to infection and is generally involved in most of the exanthematous diseases. In practically every case of measles, whooping cough, diphtheria and scarlet fever, severe reactions are produced in this area. We are always on the alert for ear involvement following these diseases, but do we pay sufficient attention to nasal complications?

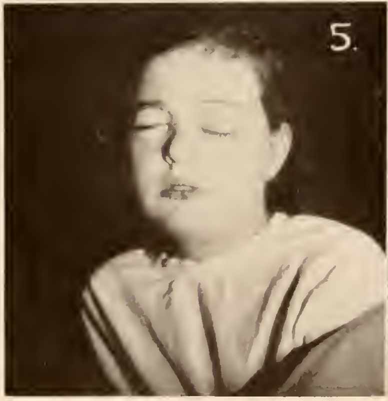
The sinuses are lined with mucous membrane similar in structure to that of the eustachian tube, and by the process of continuity can be readily infected. The numerous recessions and cavities adjoining the nasal fossae produce an ideal location for the implantation and development of organisms. If bacteria are placed upon the smooth unobstructed mucous membrane of the mouth we know that they will be eliminated by the normal douching action of the oral secretions as demonstrated by Bloomfield's (12) work. However, when they lodge in obstructed crevices like the tonsillar crypts, reduplicated nasal mucous membrane or sinus cavities, they remain for a much longer time. If the body resistance is below normal, or if the predominating organisms are of a very virulent strain, the defensive action of the tissues may not be able to resist infection. When the sinuses become extensively infected, eradication of the disease is extremely difficult. Congested nasal mucosa, hypertrophied turbinates, septal deviations, small nasal cavities all interfere with ventilation and drainage, thus prolonging a condition which could be easily eradicated in a more accessible environment.











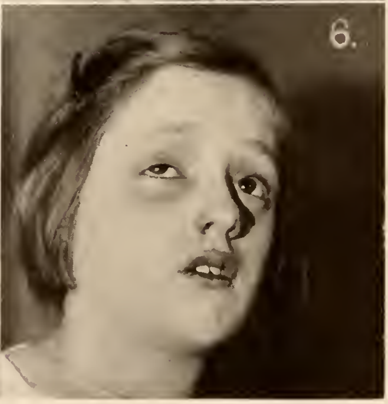


FIG. 1. Orbital abscess 3 weeks old. From infected antrum
FIG. 2. Infected antrum. 6 weeks old
FIG. 3. Infected ethmoids. Orbital abscess. Age 3 years
FIG. 4. Orbital abscess. Ethmoid infection. Age 9 years
FIG. 5. Orbital abscess. Frontal and ethmoid infection
FIG. 6. Orbital abscess. Antrum and ethmoid infection

DIAGNOSIS

The diagnosis of infected sinuses in children is more difficult than in adults, because subjective symptoms cannot be expressed. In older children, indefinite pains around the head and face with headache may be complained of, although these symptoms are not always present. The history is very important. It is well to know if the child has had measles, diphtheria, whooping cough and scarlet fever, for White (13) found thirty-two cases in fifty of his series with infected sinuses who gave a history of childhood diseases. Twenty-nine of these gave a history of whooping cough, three had diphtheria, eight had mumps, while eighteen gave a history of chronic colds. Onodi (14) tabulated twenty-three cases of the earliest reports of infected sinuses in children and all of these were complications of scarlet fever. Any chronic cold with nasal discharge should arouse our suspicion of infection in these structures. Sneezing, headache, irritability and depression are considered very important symptoms by Byfield (15). Mouth breathing and coughing are also significant signs.

In examination, the nasopharyngoscope is a help, but the procedure is rather difficult. Diagnostic puncture of the antrum with bacteriologic study of the secretion may be resorted to in obscure cases. This procedure has been used successfully by Dean and Armstrong (16). Transillumination is unreliable, as Skillern (17) points out, and in my own experience has been misleading instead of being of actual diagnostic value. X-ray examination is our greatest aid, but the plate must be made by a skillful roentgenologist and the interpretation must be correlated with clinical findings. Any child presenting a majority of the symptoms mentioned or in any case where there is cause to suspect sinus involvement should certainly have the benefit of an x-ray examination.

During the past few years I have had occasion to see a number of cases, young children from three to twelve years of age, who have had their tonsils and adenoids removed without their original symptoms of infection clearing up as had been expected. They came in for relief of colds, nasal discharge and mouth breathing. Most of them had had their tonsils and adenoids removed from two to three years previous to this examination. A summary of the important points in the cases presented follows.

CASE REPORTS

Case I. A. N., age 7, had tonsils and adenoids removed three years ago in order to clear up persistent nasal discharge. As the result of the operation there was some improvement in the symptoms for a while, but the nasal discharge continued. At the present time there is a great deal of thick mucopurulent discharge in each nostril.

A quantity of this drains postnasally causing some pharyngeal irritation. The tonsillar fossae are clean and there are no adenoids. The turbinates are congested and enlarged. X-ray examination shows clouding of the antra, also some blurring in the ethmoid cells.

Case 2. J. M., age 7½, came for the relief of constant nasal discharge. Tonsils and adenoids were removed two years ago. At the present time there is no tonsillar tissue remaining, no adenoids found. The infection is confined to the nasal cavity. X-ray examination shows marked clouding of both antra.

Case 3. E. G., age 7. Tonsils and adenoids were removed in 1919. Since operation the patient has had frequent colds and nasal discharge. At the present time there is a great deal of thick mucopurulent postnasal discharge, which produces a great deal of sniffling and coughing. There is no evidence of any remaining tonsil and adenoid tissue. X-ray examination shows clouding of both antra and some haziness of ethmoids and frontals.

Case 4. I. S., age 10, had been treated for chronic rhinitis with constant discharge from right nostril. He gave a history of repeated colds. About two and a half years ago tonsils and adenoids had been removed in an effort to clear up the trouble, but there had been very little relief. Present examination shows a great deal of turgescence of right middle and inferior tubinates. X-ray examination shows clouding of right antrum. After puncturing the antrum and several irrigations, the infection cleared up and he has since been free of symptoms.

Case 5. R. L., age 10. Patient was referred for investigation of the sinuses as the cause for repeated nasal infections. Two and a half years ago tonsils and adenoids had been removed but this had little effect on his nasal infection. X-ray examination shows definite clouding of both antra. There is a great deal of mucopurulent discharge with infiltration of the turbinates and mucous membrane. After a simple puncture of the antra and repeated irrigations the infection cleared up.

Case 6. R. L., age 6, had tonsils and adenoids removed three and one-half years ago for relief of repeated colds. Since that time there has been very little improvement in the nasal condition. Examination at this time shows marked hypertrophy of the turbinates with clouding of both antra. This is confirmed by x-ray examination. No remaining tonsil and adenoid tissue was found.

Case 7. R. S., age 13, was referred for investigation of sinuses as a possible cause for repeated attacks of asthma. He has had these attacks since he was a child, They resisted all modern methods of treatment. The diet had been carefully investigated, vaccine had been given, tonsils and adenoids removed, but the symptoms would recur. Nasal examination shows a clouding of the left antrum. After puncturing and irrigating this antrum his local nasal symptoms cleared up and he has had no further asthmatic attacks.

Case 8. C. H., age 6, for the past three years has had intermittent attacks of asthma. Colds have been frequent and there has been considerable nasal discharge. Tonsils and adenoids were removed and an effort was made to clear up the trouble. but there was little improvement in the symptoms. He was referred for nasal treatment. On examination there was marked clouding of left antrum. The right antrum was small and outlines indistinct. Ethmoids were infected and a great deal of enlargement of turbinates.

Case 9. D. L., age 8, gave a history of repeated colds, a great deal of sneezing and considerable nasal discharge. Tonsils and adenoids had been removed two years previous. Since operation colds have been as frequent, and there has been little improvement in his condition. On examination of the sinuses there was marked clouding of the right antrum. Under local treatment the infection was completely cleared up and the patient has been free from colds for several months.

Case 10. F. R., age 14, came for relief of repeated attacks of colds. Tonsils and adenoids were removed six years ago. A great deal of mucopurulent discharge was present in the nasopharynx. Examination of the nose showed a chronic ethmoid infection and clouding of both antra. Symptoms completely cleared up under local treatment.

COMPLICATIONS

Orbital abscess is one of the most frequent, and often the most dangerous complication of accessory sinus disease. A definite abscess is characterized by oedema of the affected eye, lids and surrounding tissue. The eyeball is forced out and there is immobility of the extra occular muscles. With pus formation, there is elevation of temperatue and increased leukocytosis. If the pressure is not relieved by free drainage, vision may be affected. Some of these cases occur in early life. Case 1 shows an infant three weeks old with an infected antrum, complicated by orbital abscess. This is an unusual case but it demonstrates the danger of this complication even in young children. Case 2 is of a child six weeks old, with an infected antrum and orbital complications.

Meningitis and brain abscess is a very serious complication of sinus disease and usually results fatally. Fortunately it does not occur in many cases. The complications associated with any chronic focus of infection may be present with accessory sinus diseases in children. Anemia, loss of weight, low unexplained temperature and gastro-intestinal symptoms are frequently present, so that any such group of symptoms calls for investigation and treatment of the sinuses.

TREATMENT

The simple acute infections of the accessory sinuses in children respond very favorably to treatment. Usually small does of calomel with a few days' rest in bed is all the general treatment required. Locally, the mucous membrane should be kept clean with some warm cleansing spray of normal saline or dilute Dobell's solution, after which some 20 per cent argyrol should be applied. The most convenient way to apply this to the nose is to place the child on his back and with an ordinary eyedropper drop from 15 to 20 drops in each nostril. Most of the cases clear up without complications. In the chronic cases the eradication of the infection is more difficult. If the tonsils and adenoids have not been removed it is advisable to get them out in order to clear up as many foci of infection as possible. Dean and Armstrong (18) found that 80 per cent of their cases cleared up after the tonsils and adenoids had been removed.

Local treatment consists of keeping the infected surface as clean as possible. Suction is very valuable in this connection, for many crevices can be evacuated which could not otherwise be reached. Warm saline sprays are very cleansing, soothing and stimulating to the mucous membrane. After this, it is helpful to make applications of 2 per cent silver nitrate or 20 per cent argyrol. This should be followed by some emollient spray. Young children can be best treated in a hospital. The treatment can be carried out much more satisfactorily if the child is away from its parents. Some cases are helped by the administration of vaccines. A few cases require conservative operative procedures, such as puncture and irrigation of the antra. Only in very exceptional cases is it necessary to do any radical operations.

SUMMARY

1. All children who have chronic colds with predominant nasal symptoms, such as profuse nasal discharge, stuffiness of the head, mouth breathing and asthmatic attacks, should have a careful investigation of the sinuses.
2. Cases in which tonsils and adenoids have been removed for focal areas of infection, and the symptoms have not cleared up after operation, should be suspected of harboring an infection of the accessory nasal sinuses.
3. Neglected treatment of early infection of the sinuses in children predisposes to chronic infection which may lay the foundation for serious complications in later life.
4. Nasal colds in children should be treated as an important disease. Careful investigation should be made as to their etiology and diagnosis.
5. The proper treatment of infected sinuses in children gives gratifying results. The general health of the patient is improved. They take on weight, develop more rapidly and give every appearance of being greatly benefited. Most of the cases can be cured by local treatment, for only a small number require operative procedures.

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PRIMARY CARCINOMA OF THE SMALL INTESTINE

Report of Two Cases

HARRY CLAY HULL, M.D.

BALTIMORE, MARYLAND

It is my privilege this evening to present a brief paper on carcinoma of the small intestine, together with the report of two interesting cases from the Surgical Department of the University Hospital. During the past twelve years 490 cases of cancer of the gastro-intestinal tract have been observed in this institution, but until this year none was found to be located primarily in the small intestine.

However, primary carcinoma of the small gut is not as uncommon as generally supposed. In an incomplete review of the literature I have found reports of 500 cases. The incidence varies markedly in different clinics. In a combined report of 11,809 cases of cancer of the intestinal tract, carcinoma of the small bowel was present in 2.7 per cent of the cases, or one case in 37. These figures are somewhat higher than those of Judd, Rankin and Mayo, who, in a series of 4,597 cases of carcinoma of the intestinal tract, report an incidence of 1.2 per cent, or one case in 84. In the literature the average age and sex of the patient so affected are more consistent. The average age is 46 years, and the condition occurs three times more often in men than in women.

The majority of the lesions are adenocarcinomata. They occur more rarely in the colloid or carcinoid variety, though many are recorded as undifferentiated. They may be single or multiple and are frequently a part of a generalized polyposis. The two most common forms are, the ring or annular type, and the localized type which develops from adenomatous polyps. In the 500 collected cases the condition is most frequent in the duodenum, second in frequency in the ileum and rarest in the jejunum. Metastases occur in from thirty-three to fifty-three per cent of the cases and apparently take place early, since one out of every three cases that come to operation reveal involvement of the mesenteric nodes. Invasion affects first the mesenteric nodes and peritoneum, then the liver, lungs, long bones and spinal dura in the order mentioned.

Read before the Baltimore City Medical Society, October 4, 1935.

From the Departments of Surgery and Pathology, School of Medicine, University of Maryland.

To a degree the history of this condition may simulate that of duodenal ulcer, cholecystitis or chronic obstruction from any cause. The duration of the symptoms may vary from two months to five years with an average duration of fourteen months. The onset may be insidous or more often of short duration. If insidious, there is a past history of nausea and vomiting, which has gradually increased in frequency, together with food dyscrasias over a long period, loss of weight, constipation and meteorism. If of short duration, in addition to the above mentioned symptoms, there is often a history of severe "cramp-like abdominal pains," which last for several hours and then disappear. These attacks of pain occur at intervals of one week to several months and are finally followed by symptoms of acute obstruction with cramps, nausea, vomiting and visible peristalsis. Occasionally perforation of the bowel occurs.

Laboratory Examinations. As a rule, the blood reveals the presence of a secondary anemia, the gastric contents low or absent free hydrochloric acid, and the stool occult blood. These findings are common regardless of the location of the growth.

In comparatively few of the reported cases did the x-ray film show the lesion. Repeated roentgenographic studies are necessary for diagnosis and necessitates following the barium column throughout the entire tract. Roentgenological study has its value also as a negative finding, since it is important to rule out lesions of the stomach and colon. If these portions of the tract show no demonstrable lesions on the x-ray film, and other signs and symptoms are present, carcinoma of the small bowel must be considered. Therefore, while positive x-ray findings are diagnostic, negative findings do not eliminate the possibility of carcinoma of the small bowel.

There are three salient points in the diagnosis of cancer of the small intestine. The first is the inclusion of this condition in the consideration of the differential diagnosis; second the history and third the finding of occult blood in the stools, and of low or diminished gastric acidity in the presence of negative x-rays of the stomach and colon.

The treatment is entirely surgical and offers one of two procedures —resection of the growth with entero-anastomosis, or of a sidetracking operation—depending on the existing pathological condition.

The prognosis of cancer of the small bowel is poor regardless of the type of operation. In a series of 55 cases reported from the Mayo Clinic, the duration of life was from one month to three years, with an average of less than one year.

Death occurs earlier in cancer of the small intestine than in other resectable growths in the remaining portions of the gastrointestinal tract.

During the past year the two following cases were admitted into the University Hospital to the service of Dr. A. M. Shipley:

The first case was that of a white male, a clergyman, 43 years of age, who had two admissions, one in May and the other in December, 1934.

On the first occasion, he complained of "day-long" attacks of discomfort in the upper right abdominal quadrant, associated with vomiting—often self-induced—which gave only transitory relief. These attacks began in September, 1933, and had increased in frequency. On this admission, gastric analysis showed low free hydrochloric acid and low total acidity. X-ray studies revealed only a visible appendix. Appendectomy was advised. The patient did not elect operation at this time and left the hospital.

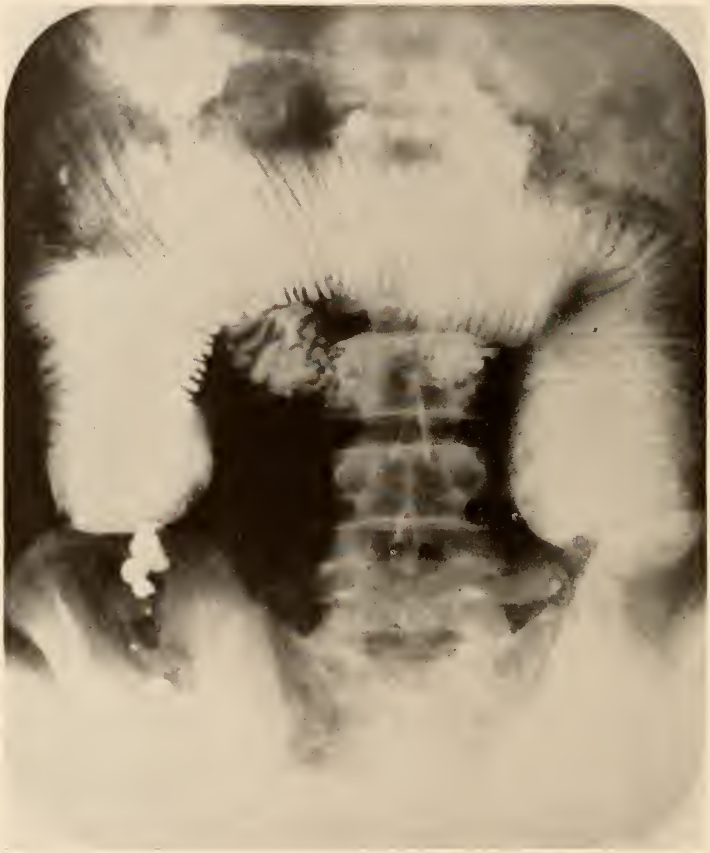

Fig. 1. X-ray of Case I, showing dilated jejunum with the point of obstruction at the level of the right iliac crest.

In June, appendectomy was performed through a right rectus incision in another hospital.

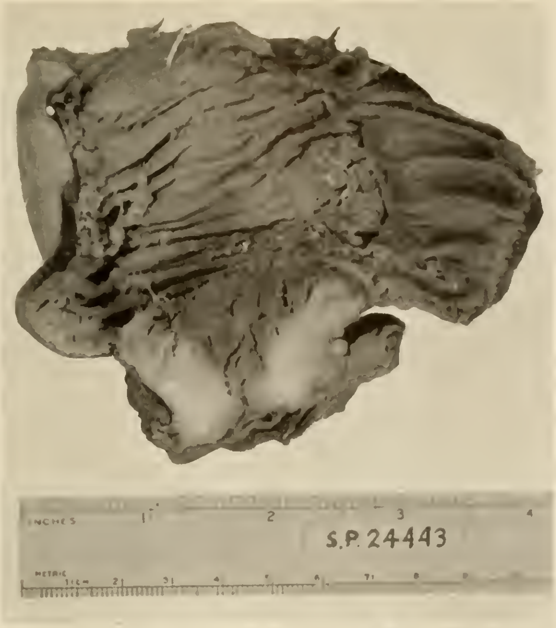

FIG. 2

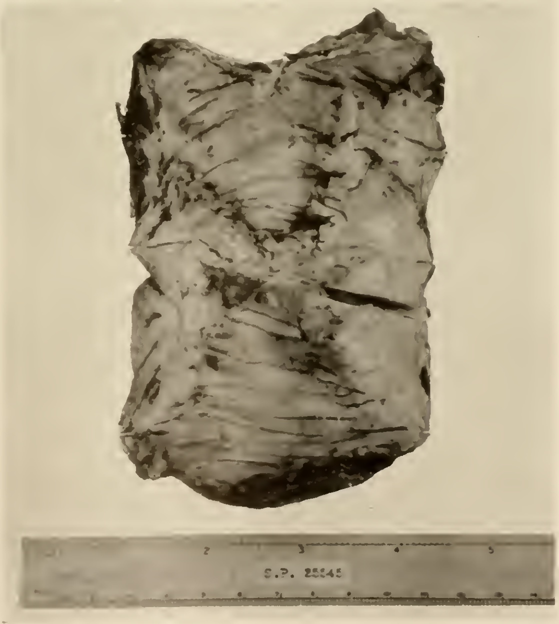

FIG. 3

FIG. 2. Gross specimen from Case I,—an annular adenocarcinoma.

FIG. 3. Gross specimen from Case II,—a diffuse infiltrating anaplastic carcinoma.

The patient was readmitted in December, 1934, complaining of persistent nausea and vomiting which had become a daily occurrence for a week prior to admission. At this time, blood was detected in the stools, and the total and the free acidity of the gastric contents continued low. X-ray examination revealed a jejunal obstruction at a point to the right of the umbilicus in the region of the abdominal incision. It was thought that the obstruction was due to postoperative adhesions.

At operation, an obstructing carcinoma was found in the jejunum. The intestine was markedly dilated on the proximal side. The growth and ten inches of intestine were resected. Side-to-side entero-anastomosis was performed. The local mesenteric nodes were involved, otherwise there was no evidence of metastases. The patient had an uneventful convalescence and was discharged on the thirty-first day, in an improved condition.

Pathological report. Adeno-carcinoma of the jejunum.

Since the patient has left the hospital, he has gained 40 pounds in weight and has returned to work. He has been enjoying good health. He was last examined 3 days ago.

The second case, was that of a white male, a mechanic, 42 years of age, who was admitted to the University Hospital in June, 1935, complaining of intermittent, cramp-like pains in the lower abdomen, associated with nausea and vomiting.

He had had three such attacks, the first three weeks prior to admission, the second one week later and the third five days before his entrance into the hospital. All three attacks were identical. Their onset was sudden, three to four hours after eating, with pain, which was severe and cramp-like in character, followed by nausea and vomiting of foul material. Shortly afterwards the pain subsided to be followed by generalized abdominal soreness.

The patient had lost fifteen pounds in the previous year and during the last six months had suffered from constipation. There was no history of serious illness or previous operation.

On examination, the patient was a healthy, stalwart individual. The abdomen was scaphoid, flaccid, with localized tenderness one inch below the umbilicus, in the midline; no masses were palpable; the examination was otherwise negative. Four days later his abdomen became distended and there was visible peristalsis, accompanied by pain and vomiting. The results of routine laboratory procedures, including gastro-intestinal series, were negative.

At operation, a partially obstructing, perforating, annular carcinoma the size of a golf-ball was found ten inches proximal to the ileocaecal valve. The first stage of a Mikulicz intestinal resection was done because of localized peritonitis. Six days later the second stage of the operation was performed. Three weeks later the abdomen was reopened through the original incision; the exteriorized intestine and mesentery were resected, and an end-to-side anastomosis was done with a Murphy button. The patient was discharged from the hospital on the 79th day after the first operation in an improved condition.

Pathological report. Undifferentiated carcinoma of the ileum.

The patient was last seen two days ago. He has gained twenty pounds in weight and has returned to work. He has had no complaints.

SUMMARY

1. Cancer of the small bowel makes up 2.7 per cent of all carcinoma in the intestinal tract.
2. Males are affected three times more often than females.

3. The average age of these patients is 45 years.
4. This lesion occurs most frequently in the duodenum.
5. Adenocarcinomata make up the majority of the lesions.
6. Metastases are present in thirty-three to fifty-three per cent of the cases.
7. The average duration of symptoms is fourteen months.
8. Occult blood in the stool and negative x-ray findings in the stomach and colon are most helpful findings for diagnosis.
9. The treatment is operative.
10. The average duration of life after excision of the growth is less than one year.

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The names listed above are officers for the term beginning July 1, 1935, and ending June 30, 1936.

In Memoriam

The Library has recently had bound the "Skilling-Doyle Memorial Volume," compiled by Mrs. Ruth Lee Briscoe, Librarian of the University of Maryland School of Medicine. Those of you who were privileged to be present on that memorable occasion when the beautiful bronze Tablet in the front corridor of the School of Medicine was dedicated by the Class of 1917 to two of its gallant members, Lieutenant John Galen Skilling, M. C., U. S. A., and Joseph Francis Doyle M.D., Gold Star men of the University of Maryland School of Medicine, will ever cherish it as a precious memory.

The Volume contains pictures of the Tablet, and of Lieutenant Skilling and Doctor Doyle, a view of the grave of Lieutenant Skilling in the American Cemetery, Romagne-sous-Montfaucon, Argonne Sector, France—the largest American cemetery of World War victims, his citations, accounts of the order of the dedication ceremonies, and the list of invited guests.

Among the priceless treasures of the Library is its collection of the portraits of the Gold Star men and women, their biographies, and the official Mortality Roll of the Alumni of the University of Maryland in the World War.

MEDICAL LIBRARY

New Accessions to the Library, October 1, 1935

Andrus, E. C.—Physical and Clinical Diagnosis, 1935.
Alexander, Franz.—The Influence of Psychologic Factors upon Gastro-intestinal Disturbances, 1935.
Babcock, W. Wayne.—A Textbook of Surgery, 2nd Ed., 1935.
Bartlett, Fredrich.—Infants and Children, 1932.
Bauer, W. W.—Contagious Diseases, 1934.
Beers, Clifford W.—A Mind that Found Itself, 1935.
Bessey.—Textbook of Mycology, 1935.
Cameron, A. T.—The Biochemistry of Medicine, 1935.
Cecil, Russel L.—Textbook of Medicine, 1934.
Craig, C. F.—Amebiasis and Amebic Dysentery, 1934.
Dawson, W. S.—Aids to Psychiatry, 3rd Ed., 1934.
Duke and Elder, S.—The Practice of Refraction, 1935.
Elmer, W. P. and Rose, W. D.—Physical Diagnosis, 7th Ed., 1935.
Evans, C. B. S.—Sex Practice in Marriage, 1935.
Evans, C. Lovatt.—Recent Advances in Physiology, 1930.
Ewen, J. H.—A Handbook of Psychiatry, 1934.
Eyre, J. W. H.—Bacteriological Technique, 1933.
Fischer, Martin.—Gracian's Manual, 1934.
Ford, William W.—Textbook of Bacteriology, 1935.
Gay, F. P.—Agents of Disease and Host Resistance, 1935.
Goldstein, Max A.—Problems of the Deaf, 1935.
Granger, Amedee.—A Radiological Study of the Para Nasal Sinuses and the Mastoids, 1932.
Harrow, B. and Sherwin, C. P.—A Textbook of Biochemistry, 1935.
Hitchcock.—Physical Chemistry of Biology and Medicine, 1934.
Hadfield and Garrod.—Recent Advances in Pathology, 1934.
Harrington, Milton.—Wish Hunting in the Unconscious, 1934.
Homans, John.—A Textbook of Surgery, 3rd Ed., 1935.
Hunter, R. H.—Aids to Embryology, 1934.
Hertzler, A. E.—Diseases of the Thyroid Gland, 1935.
Hertzler, A. E.—Surgical Pathology of the Peritoneum.
Jackson, C. M.—Morris' Human Anatomy, 1933.
Joll, C. A. and Ledie, R. C. B.—Aids to Surgery, 1935.
Kahn, R. L.—The Kahn Test, A practical guide, 1928.
Kagan, Solomon R.—Jewish Contributions to Medicine in America, 1934.
Karpman, Ben.—The Individual Criminal, 1935.
Kilduffe, Robert A.—The Clinical Interpretations of Blood Examinations, 1931.
Knaus, Hermann.—Periodic Fertility and Sterility in Woman, 1934.
Krause, A. C.—The Biochemistry of the Eye, 1934.
Landon, J. F. and Smith, L. W.—Poliomyelitis, 1934.
Livingston, W. K.—The Clinical Aspects of Visceral Neurology, 1935.
Lobel, Josef.—Medicine, A Voyage of Discovery, 1934.
Logie, H. B.—Standard Classified Nomenclature of Disease, 1935.
Malamud, William.—Outlines of Psychiatry, 1935.
Maliniak, J. W.—Sculpture in the Living, 1934.

Mayou's—revised by Sorsby and Ridley—Diseases of the Eye, 1933.
Muir, Richard.—Bacteriological Atlas, 1927.
McCann, F. J.—The Treatment of the Common Female Ailments, 3rd Edition.
Miller, C. J.—An Introduction to Gynecology, 2nd Ed., 1934.
Novak, Emil.—The Woman Asks the Doctor, 1935.
Ogino, K.—Conception Period of Women, 1935.
Osgood, Edwin C.—Laboratory Diagnosis, 2nd Ed., 1935.
Paton, D. M.—The Interaction of the Lymph and Blood Glands, 1935.
Paget, Stephen.—For and Against Experiments on Animals, 1912.
Penrose, Lionel S.—Mental Defect, 1934.
Renz, Carl.—Big Problems on Little Shoulders, 1935.
Rettger, L. et al.—Lacto Bacillus Acidophilus.
Richmond, Winifred V.—The Adolescent Boy, 1933; also, An Introd. to Sex Education, 1934.
Riesman, David.—The Story of Medicine in the Middle Ages, 1935.
Ross, J. S. and Facilie, H. P.—Handbook of Anaesthetics, 4th Ed., 1935.
Savil, T. D.—A System of Clinical Medicine, 9th Ed., 1933.
Safian, Joseph.—Corrective Rhinoplastic Surgery, 1935.
Sibley, Katherine.—Elementary Human Anatomy, 1935.
Steward, F. T., and Lee, W. E.—A Manual of Surgery, 1931.
Todd, J. T. and Sanford, A. H.—Clinical Diagnosis by Laboratory Methods, 1935.
Trelease, S. F. and Yule, S. E.—Preparation of Scientific and Technical Papers, 1930.
Trease, G. E.—A Testbook of Pharmacognosy, 1935.
Treves, F.—Surgical Applied Anatomy, 9th Ed., 1934.
Walsh, William S.—Making Our Minds Behave, 1935.
Whitby, L. E. H. and Britton, C. J. C.—Disorders of the Blood, 1935.
Williams, H. S.—Drugs Against Men, 1935.
Williams, F. E.—Russia, Youth, and Present Day World, 1934.
Worcester, Alfred.—Sex Hygiene, 1934.
Watson, F.—Hugh, O. Thomas, a Personal Study, 1934.
Winton, F. R. and Bayliss, L. E.—Human Physiology, 2nd Ed., 1935.
Wolff, Eugene.—A Pathology of the Eye, 1935.
Wolfe, W. Beran.—How to Be Happy Though Human, 1931.
Wolfe, W. Beran.—Calm Your Nerves, 1933.
Ward, R. W. and Smith, A. J. D.—Recent Advances in Radium, 1933.
Zilboorg, Gregory.—The Medical Man and the Witch During the Renaissance, 1935.
Zoethout, W. D.—A Textbook of Physiology, 1935.
Zondeck, Selmar.—The Diseases of the Endocrine Glands, 1935.

ITEMS

The following alumni spoke at the round table luncheon held by the Medical and Chirurgical Faculty of the State of Maryland at its annual meeting on April 24, 1935: Drs. George E. Bennett, class of 1909, "Orthopedic Surgery;" Leo J. Goldbach, class of 1905, "The Eye in Relation to Infectious Diseases;" Eugene H. Hayward, B. M. C., class of 1901, "Some Medical Legal Aspects in Accident Surgery;" Howard J. Maldeis, class of 1903, "Legal Responsibilities of the Physician;" George W. Mitchell, "Recurrent Nasal Infections in Children;" John W. Pierson, class of 1905, "Radiological Treatment of Lymphoblastoma."

The eastern section of the American Congress of Physical Therapy held its afternoon session of March 29, 1935, at the University of Maryland Hospital. The program was as follows:

1. Address of Welcome. A. J. Lomas, superintendent, University Hospital.
2. Irradiation Therapy of Carcinoma of Cervix Uteri. J. Mason Hundley, Jr., associate in gynecology, University of Maryland.
3. Passive Vascular Exercises in the Treatment of Peripheral Vascular Disturbance. Arthur M. Shipley, professor of surgery, University of Maryland.
4. Treatment of Delayed Union of Fractures. Allen F. Voshell, professor of orthopedic surgery, University of Maryland.
5. Diathermy and Regeneration of Bone. E. David Weinberg, instructor in orthopedic surgery, Johns Hopkins University, and Grant E. Ward, instructor in surgery, University of Maryland.

Dr. Isadore A. Siegel, associate in obstetrics and Dr. W. Allen Deckert, a volunteer in the department of operative surgery have been appointed Health Officers in the Division of Maternity Hygiene of the Baltimore City Health Department.

The home obstetrical service conducted by the Baltimore City Health Department has been discontinued and an enlarged prenatal clinic has been established under the direction of Dr. M. Alexander Novey, of the Bureau of Child Hygiene, an Associate in Obstetrics in the University of Maryland.

Dr. Arthur M. Shipley, class of 1902, is chairman of the State Executive Committee for Maryland of the American College of Surgeons; Dr. Richard G. Coblentz, Associate in Neurological Surgery, secretary and James M. Dick, class of 1895, counselor.

The following alumni are on the medical staff of the Baltimore City Health Department:

Drs. Francis L. Bagli, class of 1921
Henry F. Buettner, class of 1916

Drs. Earl P. Clemson, class of 1928
John V. Clift, B. M. C., class of 1913
Roscoe Z. G. Cross, B. M. C., class of 1904
Samul S. Glick, class of 1925
Harris Goldman, P. & S., class of 1910
Charles R. Goldsborough, class of 1919
H. Clifford Grant, class of 1914
George W. Hemmeter, class of 1901
Albert Jaffe, class of 1921
B. M. Jaffe, class of 1916
Thomas W. Keown, B. M. C., class of 1895
O. L. Long, B. M. C., class of 1898
W. E. McClanahan, class of 1902
Benjamin O. McCleary, P. & S., class of 1910
Howard J. Maldeis, class of 1903
F. C. Marino, class of 1916
Thomas R. O'Rourke, class of 1921
J. A. F. Pfeiffer, B. M. C., class of 1908
Lewis J. Rosenthal, P. & S., class of 1901
Albert Scagnetti, class of 1924
Robert V. Seliger, class of 1924
William A. Sinton, Class of 1925
John A. Skladowsky, class of 1915
J. Walker Thomas, P. & S., class of 1903
Howard H. Warner, class of 1914
Samuel Weinberg, P. & S., class of 1901
Alexander A. Weinstock, class of 1924
H. Whitney Wheaton, class of 1917
Henry Lyman Whittle, class of 1903
Howard E. Wooden, B. M. C., class of 1901

The following alumni are consultants to the Baltimore City Health Department:

Drs. Arthur G. Barrett, P. & S., class of 1900
Andrew C. Gillis, P. & S., class of 1905
James M. H. Rowland, B. M. C., class of 1892
George Walker, class of 1888
Maurice C. Pincoffs, professor of medicine, University of Maryland
Arthur J. Lomas, superintendent, University of Maryland Hospital

Dr. Bartus T. Baggott, class of 1916, is chief of the section on tuberculosis of the Baltimore City Health Department.

The Transactions of the American Association for the Study of Goiter (1935) contains an article by Fred W. Rankin, Lexington, Ky., class of 1909, entitled "Surgery of the Parathyroid Glands." On October 14, 1935, Dr. Rankin delivered an address before the International Medical Assembly Interstate Postgraduate Medical Association on "Hyperplastic Tuberculosis of the Large Bowel, its Diagnosis, Treatment and Prognosis."

Dr. John O. McReynolds, Dallas, Tex., P & S., class of 1891, read a paper "Malignant Neoplasms of the Eye and Orbit" before the American College of Surgeons sectional meeting for the District of Columbia, Maryland, Virginia, West Virginia and Delaware, held in Washington, D. C., April 11–12, 1935; Dr. J. Mason Hundley, Jr., Associate in Gynecology, University of Maryland on "Cancer of the Cervix;" Dr. Fred. W. Rankin, Lexington, Ky., class of 1909, on "Sympathectomy for Megacolon and Obstipation" and Dr. Clyde A. Clapp, B. M. C., class of 1902 and Professor of Ophthalmology, University of Maryland, on "The Effects of Iris Inclusion Operation upon the Tension in Glaucoma."

Dr. Allen Graham, Cleveland, Ohio, B. M. C., class of 1909, is president of the American Association for the Study of Goiter.

Dr. J. Leroy Wright, Baltimore, Md., B. M. C., class of 1908, has resigned as warden of the House of Correction, Jessup's Md.

At the regular monthly meeting of the pediatric staff of the University Hospital held April 3, 1935, the program was as follows:

1. A case of bacterial endocarditis. Dr. Albert Jaffe.
2. Maternal over protection and rejection. Dr. H. W. Newell.

Dr. Marie Kovner, Instructor in Pediatrics, University of Maryland, is secretary to the pediatric staff.

Dr. Joseph C. Bernstein, Assistant in Dermatology, has opened offices at 1307 N. Calvert street, Baltimore. He limits his practice to dermatology and syphilogy.

At the regular monthly meeting of the pediatric staff of the University Hospital held February 27, 1935, the program was as follows:

1. Muscular dystrophy. Dr. Guy Brugler.
2. Interesting case of hypopituitarism with sexual precocity of the adrenal type. Dr. Albert Jaffe.

Dr. Lauriston L. Keown, Baltimore, Md., class of 1933, has been appointed a first lieutenant in the United States Army Medical Reserve Corps.

Dr. John A. Skladowsky, class of 1912, has been promoted to a full time officer in the Baltimore City Health Department and has been assigned to the Western Health District with headquarters at 617 West Lombard St. Dr. Skladowsky joined the department in 1912, since which time he has served as a school physician and investigator in communicable diseases.

Dr. Melvin B. Davis, Baltimore, Md., class of 1931, has announced that he has limited his practice to the administering of anesthesia. He can be reached at the University of Maryland Hospital.

Dr. Kermit Edward Osserman is located at 215 West 91st St., New York, N. Y.

Dr. Henry Janney Walton, Baltimore, Md., B. M. C., class of 1906, has announced the removal of his offices to the Medical Arts Building. He has associated with him in the practice of radiology Dr. Harry Archer Miller.

Dr. Theodore Wollak, Baltimore, Md., class of 1927, has been appointed superintendent of the Torrance State Hospital, Torrance, Pa. Dr. Wollak is a member of the American Psychiatric Association and holds a commission in the U. S. Army Medical Reserve Corps. He served on the staff of Spring Grove State Hospital, Catonsville, Md., for two years. He has been on the staff of the Torrance Hospital for the past four years.

Dr. Paul Schenker, Baltimore, Md., class of 1926, has been appointed a coroner for Baltimore. He will serve in the Northeastern district. Dr. Schenker was born in East Baltimore, 32 years ago. He is the son of Mr. and Mrs. Hyman Schenker. He was educated in the local public schools and graduated from the Baltimore City College. Dr. Schenker served a three-year internship at the West Baltimore General Hospital and later became its medical superintendent. He resides at 1919 East North Avenue.

After twenty-three years of service in the United States Navy and twelve in the National Guard, Dr. W. Guy Townsend is going to retire from his military duties. It will take a special act of Congress to get him out, though, because he was one of a group of specialists taken into the service through a special act. There is a bill now before the House to permit his retirement. At first Dr. Townsend was affiliated with the National Guard, and when he resigned from that branch of the service in 1912 he bore the rank of major, to become actively affiliated with the navy in the same year. Prior to 1912 he had done public health work for both the city and state departments, and was connected for a time with the Johns Hopkins Hospital dispensary. The son of a Methodist clergyman, Dr. Townsend was born in Calvert county, but was raised in the different parts of the State to which his father was transfered as clergyman. He attended Randolph-Macon College, and studied medicine at the University of Maryland. Then followed post-graduate work at the Johns Hopkins Medical School, after which he began his practice here. His latest activity has been the organization of units of medical specialists, designed to function in case of national emergencies. In each of these units is contained a surgeon, a physician and one specialist in each important division of medicine. The regular naval units would be sent to sea or to battle-field hospitals in case of an emergency, it was explained, and upon the special units now being organized would devolve the work of taking care of the hospitals at home. Dr. Townsend, who has the rank of lieutenant in the navy, has made several summertime cruises with naval vessels, but the major portion of his service has been recruiting duty in the city. He is still feeling fine and fit, he declares, and recently returned from a three months' trip to the West Coast. His home in Baltimore is at 214 Ridgewood Road, Roland Park.

The lecture course planned for the Baltimore Red Cross by Dr. A. D. Lazenby, class of 1916, includes on the program the following speakers and topics:

Anatomy: Dr. Monte Edwards, associate professor of surgery, University of Maryland.
Infection: Dr. A. M. Shipley, professor of surgery, University of Maryland.
Fractures, Bone and Joint Injuries. Dr. George E. Bennett, class of 1909, visiting surgeon in orthopedics, Johns Hopkins Hospital.
The Unconscious Patient: Dr. A. D. Lazenby, class of 1916, chief surgeon, Maryland Casualty Company.
Shock: Dr. Frank S. Lynn, class of 1907, professor of clinical surgery, University of Maryland, president of the Baltimore City Medical Society.

Dr. Edgar G. Ballenger, Atlanta, Ga., class of 1901, and Dr. Edward A. Looper, Baltimore, Md., class of 1912, are councilors of the Southern Medical Association and Dr. Henry J. Walton, Baltimore, Md., B. M. C., class of 1906, is secretary to the section on radiology.

Drs. John F. Hogan, P. & S., class of 1911; Norbert Charles Nitsch, class of 1913, Karl J. Steinmuller, Instructor in Surgery, Eugene L. Flippin, Associate in Roentgenology, and Harry Goldsmith, class of 1913, who have been commissioned lieutenant commanders in the U. S. Naval Reserves, have formed a specialist unit to be known as Medical Specialist Unit No. 2, of the U. S. Naval Reserves, Fifth naval district.

Dr. Charles Walter Maxson, Baltimore, Md., P. & S., class of 1910, spoke on "Unpublished Facts about the World War" at a luncheon given December 2, 1935, at the Emerson Hotel, by the Scimeter Club of Boumi Temple. Dr. Maxson saw service with the American Army in France and was captured and held in a German prison camp for a time.

Dr. Emil Novak, Baltimore, Md., B. M. C., class of 1904, has returned from a lecture tour to the South. He delivered his first address before the New Orleans Gynecological and Obstetrical Society. From there he went to Houston, Texas, for a series of six lectures, thence to Galveston and Fort Worth, Texas and concluded his trip by attendance on the Southern Surgical Meeting at Hot Springs, Va.

The Department of Pharmacology has received a grant of $200.00 from the American Medical Association to further investigate the degradation products of glucose and the sugar alcohols in the treatment of diabetes. This grant was awarded by the Council of Therapeutic Research of the American Medical Association.

The following New England Alumni attended the annual session of the American Medical Association, held at Atlantic City, N. J., in June, 1935:

Doctor	*City*	*School*	*Class*
Bailey, Harry	Hartford, Conn.	U. of M.	1922
Dillon, William J.	Springfield, Mass.	U. of M.	1916
Dowling, Joseph L.	Providence, R. I.	U. of M.	1915
Gill, Charles E.	Westfield, Mass.	U. of M.	1927
Holmes, James	Springfield, Mass.	U. of M.	1917
Talbot, Henry P.	Hartford, Conn.	U. of M.	1927
Stetson, Halbert T.	Greenfield, Mass.	P. & S.	1895

DEATHS

Abbott, Alexander Crever, Philadelphia, Pa.; class of 1884; emeritus professor of hygiene and bacteriology, University of Pennsylvania School of Medicine; formerly lecturer in hygiene, Johns Hopkins University School of Medicine; member of the Society of American Bacteriologists; for many years member of the city board of health; served during the World War; author of the Principles of Bacteriology and the Hygiene of Transmissible Diseases; aged 75; died, September 11, 1935, of cerebral hemorrhage.

Averitt, Kirby Gladstone, Cedar Creek, N. C.; B. M. C., class of 1893; member and past president of the state board of medical examiners; member of the county board of health; aged 65; died, September 18, 1935, of cerebral hemorrhage. Upon his graduation he practised medicine for a year at Autryville. He then located at Cedar Creek near Fayetteville where he continued the practice of his profession for forty-one years and was highly esteemed both as a physician and as a citizen. He was elected on the Board of Medical Examiners of North Carolina in 1932 and was filling the branch of materia medica at the time of his death. He had been at one time vice president of the North Carolina Medical Society and president of the Cumberland County Medical Society. Dr. Averitt was born at Stedman, N. C. and was a son of Jonathan H. Averitt and Charlotte Averitt. He married Miss Mary C. Faircloth of Stedman who with four children survives him. The state board of medical examiners and the county board of health were the honorary pall-bearers. Physicians from many parts of the state were in attendance amongst whom were: Dr. Carl V. Reynolds, secretary state board of health; Dr. L. B. McBrayer, secretary-treasurer, North Carolina Medical Society and Dr. C. S. Tate, Ramseur, N. C., president of the Randolph County Medical Society, a class-mate and room-mate.

Beal, David Oral, Afton, Wyo.; P. & S., class of 1912; served in the British Army during the World War; aged 47; died, August 16, 1935, of pneumonia.

Brooks, Baird Urquhart, Durham, N. C.; class of 1905; served during the World War; aged 54; died, August 24, 1935, of coronary thrombosis.

Bunting, Richard Clinton, Memphis, Tenn.; class of 1899; formerly clinical assistant, associate and associate professor of neurology, University of Tenn. College of Medicine; aged 58; died, September 30, 1935, of carcinoma of the pancreas and hemorrhagic pancreatitis.

Cavins, Lester Blake, Bloomington, Ill.; B. M. C., class of 1904; medical director of the State Farm Life Insurance Company; served during the World War; aged 58; died, September 28, 1935, of coronary thrombosis.

Cox, Newman H. D., Baltimore, Md.; class of 1902; Baltimore University School of Medicine (1895); aged 68; died, October 17, 1935. Dr. Cox was born in Nova Scotia. After graduating he spent four years in Africa.

Dold, Calvin Graham, Buena Vista, Va.; class of 1891; aged 65; died, June 22, 1935, of carbuncle of the neck.

Floyd, George Frederick, Birdsnest, Va.; P. & S., class of 1883; aged 77; died, August 29, 1935, of myocarditis.

Frazier, Herbert H., Hanover, Mich.; B. M. C., class of 1893; aged 66; died, July 26, 1935, of pernicious anemia.

Gorsuch, Harry Kepler, Baltimore, Md.; P. & S., class of 1889; for many years city coroner; aged 66; died, October 9, 1935, of angina pectoris. He was a son of Thomas Jefferson Gorsuch and Laura Temperance (Miller) Gorsuch.

Hackney, Thomas Jefferson, Lake City, Fla.; P. & S., class of 1881; aged 77; died, July 24, 1935, of cardiac disease.

Henderson, William Frank, Blacksburg, Va.; Washington University School of Medicine, class of 1876; aged 81; died, September 23, 1935, of chronic myocarditis.

Holdsworth, James Charles, Chicago, Ill.; P. & S., class of 1896; served during the World War; aged 64; died, August 17, 1935, of subacute bacterial endocarditis.

Lamb, Thomas Allens, Alexandria, Va.; P. & S., class of 1915; aged 47; died, August 30, 1935.

Lawlor, Edward Francis, Lawrence, Mass.; B. M. C., class of 1905; aged 57; died, October 6, 1935, of coronary sclerosis.

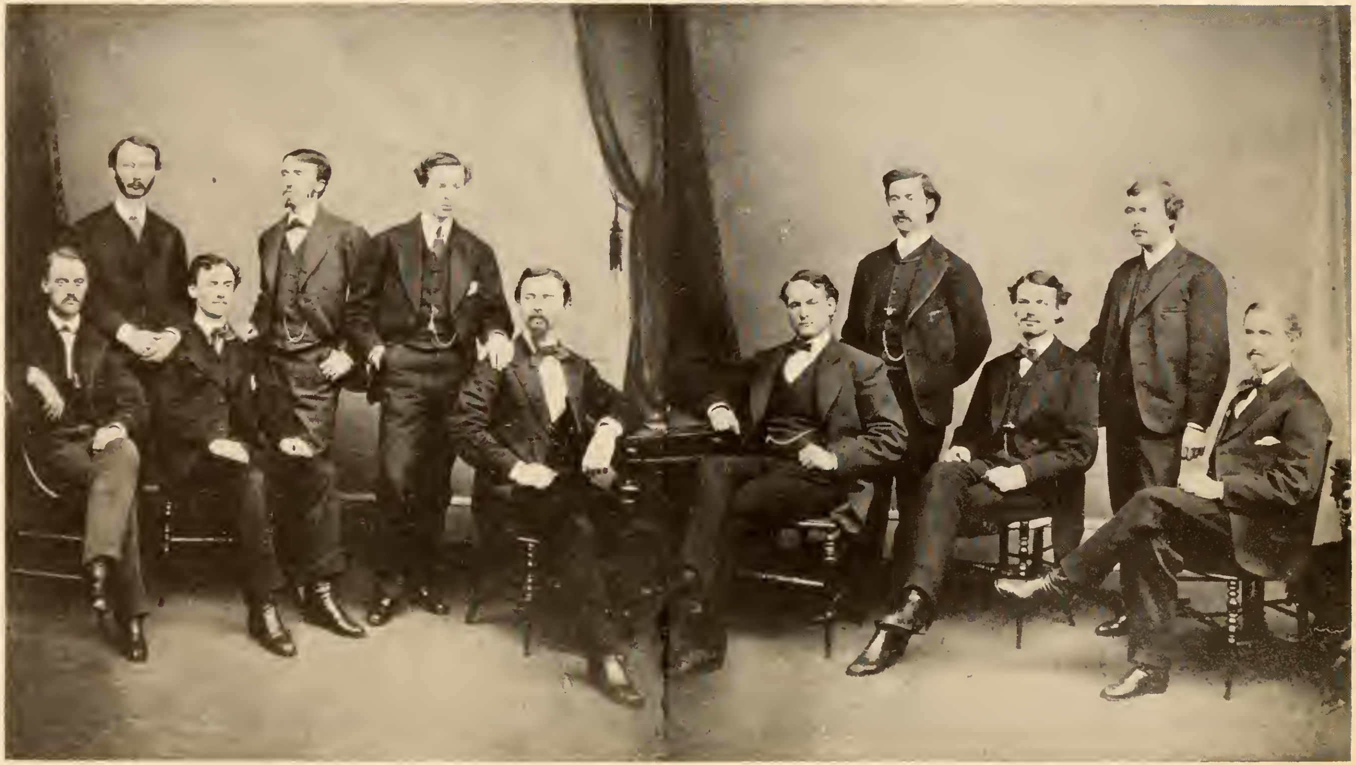
Nuckolls, Chester B., Hillsville, Va.; B. M. C., class of 1893; University College of Medicine, Richmond (1894); aged 68; died, June 28, 1935.

Phillips, Cyrus B., Pitman, N. J.; class of 1882; aged 76; died, September 16, 1935, of cardiac disease.

Rice, George L., McSherrystown, Pa.; Washington University School of Medicine, class of 1873; formerly county coroner and member of the state legislature; for thirty-six years a justice of the peace; aged 85; died, July 15, 1935.

Tassell, William Henry, Coudersport, Pa.; P. & S., class of 1883; aged 79; died, September 5, 1935, of intestinal obstruction.

Turner, Joseph Pinkney, Greensboro, N. C.; class of 1896; medical director of the Jefferson Standard Life Insurance Company; aged 63; died, September 29, 1935, of coronary thrombosis.



CLASS OF 1869

The Dean is anxious to identify the men in this group. If you recognize any of them, he would appreciate your notifying him to that effect.

BULLETIN
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THE VITAMIN REQUIREMENTS OF THE AVERAGE CHILD[1]

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In 1913, Funk first gave the name "Vitamine" to a mysterious food substance which had begun to attract the attention of investigators in nutrition. Since that day, the medical profession has been deluged with a huge and rather overwhelming flood of literature on the subject of vitamins.

Almost any medical journal that one may pick up has an article on some phase of avitaminosis. New bits of knowledge are being gained and reported all the time. Every mail brings at least one letter from some drug firm, extolling the virtues of this synthetic or that concentrated vitamin preparation. Occasionally these letters even contain photographs of runty looking rats, or half dead chickens, with the implication that our own little patients will look as badly if they are not given the preparation which that particular firm happens to be selling.

In all there has been, and still continues to be, such a tremendous mass of detailed, and often confused or biased information about the vitamins, that the average busy practitioner is quite unable to keep abreast of it all. He wishes to give his patients the benefit of the latest available knowledge; yet, the more he reads, the more confused he is apt to become.

However, the physician who is primarily interested in keeping infants and children in good health may take comfort in remembering that he needs to keep in mind only a few, rather simple facts about the vitamins, in order to supervise this phase of his little patients' needs according to the best of present-day knowledge.

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[1] From the Department of Pediatrics, University of Maryland.

This paper is an attempt to review briefly some of these facts. No apologies are offered for repeating what should be—but sometimes is not—common knowledge about the vitamins, or for omitting any data, or references on the subject, that do not directly apply to the prophylactic needs of a normal child.

Perhaps it may be well to begin by reviewing a few of the general aspects of the question of vitamins.

In the first place, it is well to remember that vitamins are only a single factor in the complex needs of a growing child. There is often a tendency to make them loom too large. Equally important are the other nutritional elements. After all, the vitamins seem to be only activators, and if the rest of the child's bodily food requirements are not supplied in adequate amounts and usable form, all the vitamins in the world cannot assure that child good health. Nor can we feed vitamins to a child who has a poor appetite and is not thriving, and expect to cure him, if we have overlooked the fact that bad training is responsible for his failure to eat, or that some obscure infection is at the bottom of his failure to thrive.

Secondly, the bulk of the work that has been done on the vitamins, so far, concerns severe grades of deficiencies, which almost never develop on the usual diets given to American children. It is well known that there is a difference between the effects of slight and severe grades of vitamin deficiencies. In the severe grades, each avitaminosis causes different and highly specific symptoms. In the mild deficiencies, however, the symptoms that arise seem, at least superficially, to be non-specific. They consist primarily in the failure to gain and thrive, the lack of appetite and good digestion, decreased resistance to infection, improper development of the body, and notably a tendency to carious teeth.

If the physician does not feel that his patients lack vitamins until they begin to show symptoms of severe vitamin deficiencies, he is missing the essence of the modern concept of vitamin requirements. Sherman (1), and most nutritionalists, feel that the average child needs several times the amounts of vitamins which are necessary to prevent actual symptoms of avitaminosis, in order to maintain maximum health.

One of the biggest gaps in our knowledge of the vitamins today seems to lie in our ignorance of the exact amounts of the various vitamins that are necessary to maintain optimum health and growth. But investigators are now especially interested in this phase of the subject, and great progress is being made. The various vitamin units are being standardized (2), so that soon when anyone speaks of so many A units or D units, we will all know which unit is meant. The various foods are now being classified as containing so many vitamin units, instead of being classified by means of the vague and confusing plus or minus signs that one has heretofore seen in vitamin tables.

We are learning earlier and earlier symptoms of vitamin deficiencies, and are devising tests to detect these symptoms, so that we can measure our various vitamin requirements in terms of known units. For instance, a photometer has been recently used to measure degrees of "night blindness" (3). Since "night blindness" is about the earliest definite evidence of slight A avitaminosis, the instrument may possibly be used to measure the minimal need for A in the body. Some (4) believe that they can measure degrees of capillary fragility, and thus detect the beginning of a C deficiency. X-ray and blood calcium studies, of course, have long been used to study the needs of the body for the antirachitic vitamin.

Furthermore, much of the work that has been done on vitamins has been done with laboratory animals, and the findings are not always directly applicable to human beings. It has been repeatedly shown that each species has its own particular and varying vitamin requirements, but when some striking result has been obtained, and reported, from an experiment on rat or pigeon, we are apt to conclude that the same result will occur in our own patients, under similar conditions. Sometimes it does, but often it does not. In fact, one is occasionally reminded of the days before Vesalius, when physicians dissected monkeys and pigs, and then treated their patients as though the patients had anatomies identical with those of the animals.

This is mentioned because we all have a tendency to seize upon any spectacular idea, or grasp at any straw, that might improve the well-being of patients under our care. Occasionally we have overdosed our patients with vitamins (as when viosterol first came out), or we have concentrated on some newly discovered vitamin to the exclusion of others which were equally important.

It is interesting to note that there is some evidence (5) that the vitamins, like the hormones, interact on one another. One vitamin seems to reinforce (6) the action of another. Two others may be mutual antagonists (7). Thus it may be wise, not only to give vitamins, but to try to give them in as nearly balanced proportions as our knowledge permits.

At this writing, most investigators consider that there are nine or ten distinct vitamins. But as some of these are chiefly separated on the basis of animal experimentation, being commonly found together in nature, in the routine feeding of the normal infant or child we still need to concern ourselves prophylactically only with Vitamin A, the old B complex, and Vitamins C and D.

Let me briefly refresh your memories on certain points about these four:

Fat soluble A. This vitamin is found, as are most of the others, in many common foods. Milk contains some, primarily in the butter fat. So do most of the animal viscera, particularly the livers. A's precursor, carotene, is found in the pigments of many vegetables. Carrots, especially, are an excellent source of carotene. A most concentrated source of the actual A vitamin is the oil from the livers of certain deep sea fish. Hence, when cod liver oil, for instance, is given in quantities adequate to supply the average child's need for the D vitamin, most nutritionalists believe that the child is also receiving an abundance of the A vitamin.

Vitamin A is known to be destroyed very readily by oxidation, especially at high temperatures. Hence one may not be able to depend upon pasteurized or boiled milk, or on cooked meat and vegetables, as a safe source of this vitamin.

Vitamin A has recently been advertised as the "anti-infective" vitamin, but no one has been able to show any specific evidence that it possesses such power. When it is lacking, of course, the epithelial membranes become weakened and so undoubtedly predispose the body to infections, especially infections of the respiratory tract. But there has been no proof that a surplus of this vitamin can raise the body's resistance to infection above the normal level (8).

The B complex. This "complex," of course, is actually composed of several distinct and definitely recognized vitamins, of which Vitamin B, Vitamin G and Vitamin E are the best known.[2] For prophylactic purposes, however, we seem justified in considering them all as a single unit, because of the fact that they all are usually found together in the same foods, and that a good source of one is almost always a good source of the others.

The B complex is widely distributed among the common foods; and it is particularly concentrated in the germinal portions of the various grains, in yeast and the yolk of eggs. When we look for a special source of this group of vitamins, we usually get it in the form of a combination of wheat germ and yeast, several preparations of which are commercially available.

It is to be remembered that heat destroys a portion of the vitamins in this complex, and that, to insure the child's getting all the vitamins, one source of the complex, at least, must be uncooked.

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[2] B^1 has recently been isolated and its structure chemically determined.

The mild degrees of B-complex deficiencies are now believed (9) to be much more common than they were once thought to be, and are often unsuspected. The important symptoms of such mild deficiencies are anorexia, constipation, insufficient growth, lack of vigor, and perhaps lowered resistance to infection.

Vitamin C. Vitamin C is, of course, the antiscorbutic vitamin. In this country we usually look to orange juice or tomato juice to supply the necessary quantities of this vitamin, until the child is old enough to eat raw fruits and vegetables. Cooking, in the ordinary manner, destroys most of this vitamin, but it has been found that it is possible to can certain fruits commercially without losing much of the vitamin C content, provided that oxygen is excluded during the process. When orange or tomato juice cannot be used to supply this vitamin in the ordinary diet, various substitutes may be found. Potato juice, ground lettuce leaves, pineapple juice, lemon or lime juice, and bananas are all sources of this vitamin. The pure vitamin C has been isolated, and the synthetic vitamin is now available commercially under the name of "Cevitamic acid."

Vitamin D. Vitamin D is the vitamin that has the most limited distribution in food stuffs. Apparently man was intended to depend chiefly upon sunlight for this vitamin. Years ago, however, we learned that the oil which is extracted from the livers of certain deep sea fishes is a potent source of vitamin D, and cod liver oil has long been a stand-by. Recently we learned that the ultra violet rays are the active portion of the sun-rays, and we use them as a substitute for sunshine, and have even used them to the extent of forming vitamin D in any of our foods that contain ergosterol.

The question often arises as to which is the best source of vitamin D to use as a routine measure for prophylactic administration in children. When the use of sunlight is impracticable, the consensus of opinion seems to favor plain cod liver oil as the first choice. This oil has the advantage of being thoroughly tested by both time and experiment. It is a "natural" product, and contains both vitamins A and D, in what seem to be balanced proportions. Mellanby (10), for instance, seems to feel that cod liver oil is best, not only because of its vitamin content, but also because the oil and iodine in it aid in combating any tendency to poor nutrition in a child.

The place of the various other fish oils and the various synthetic forms of vitamin D, such as viosterol or irradiated foods, is not yet settled; but it is undoubtedly better for the average practitioner to stick to cod liver oil until investigators have worked the matter out more thoroughly. Viosterol, for example, has been widely used as a routine source of vitamin D, but recent clinical evidence (6) seems to indicate that, unit for unit, it is not nearly so satisfactory as either cod liver oil or a good cod liver oil concentrate. Furthermore, there is very good evidence of the synergistic action of vitamin A (6) with vitamin D; and A, of course, is not present in viosterol. When cod liver oil cannot be used, either because of toxic effects, taste, or the large quantities which would be necessary, a good cod liver oil concentrate in the form of a liquid, tablet or capsule makes an excellent substitute (6).

It might be noted in passing that the giving of vitamin D is only part of the story in the prevention of rickets. It is equally important that the child get enough calcium and phosphorus. Of the common foods which are usually included in a normal ration, only milk seems to be able to supply an adequate amount of these two minerals. Apparently a pint and a half to a quart of milk a day contains an adequate supply of the two minerals. In addition, one must be assured that the child can assimilate the minerals. Children with such conditions as cœliac disease, renal rickets, etc., may take an abundance of both calcium and phosphorus, and of vitamin D, and yet develop the worst type of rickets. Cereals contain varying amounts of what seems to be a specific rickets-producing substance (10), and a child who eats large quantities of cereal is apt to develop rickets even if given standard amounts of vitamin D. Lastly, the child must have had a proper start. A child whose mother, during pregnancy, lived on a diet deficient in minerals or in vitamin D, or a premature child, both require excessive amounts of vitamins and minerals to overcome their original handicap.

If the above facts are kept in mind, we have all the information we need to keep a child in good health, and to allow him to develop normally, as far as the vitamins are concerned.

To be specific: (*a*) We must first watch the child's diet in general, and see that he has as nearly a "balanced" diet as we are able to provide for him. As soon as he is old enough to take them, he must get large quantities of the so-called protective foods: vegetables and fruits, milk and eggs.

(*b*) We must see that he gets, daily, three teaspoonsful of cod liver oil (2), or the equivalent in a good concentrate. This takes care of both vitamins A and D. In the summer time, if attention is given to other sources of vitamin A, one may depend on sunshine for vitamin D, and one probably should do so, if possible.

(*c*) The exact quantities of the B-complex that are needed in the diet of the average child are not yet thoroughly known. In dealing with the older child, a diet that includes a large proportion of the protective foods undoubtedly supplies an abundance of the B-complex. In dealing with infants, and children with improper food habits, there is evidence (9) that it is better to supply an extra source of the B-complex—perhaps a tablespoonful a day of one of the commercial combinations of yeast and wheat germ.

(*d*) The bodily requirements of the average child for vitamin C, at any age, are apparently well taken care of by an ounce of either orange or tomato juice a day (2).

A word about the nursing child seems to be called for at this point. For a nursing child, no vitamins beyond those supplied by the mother's milk are needed—provided the mother takes, in her diet, an adequate amount of fruit and vegetables, supplemented by sunlight or cod liver oil. It is distinctly up to the physician in charge, however, either to supervise the mother's diet and habits in detail, or to see that the child gets supplementary vitamins, exactly as though he were being fed on the bottle.

The question as to how long the supplementary vitamins must be continued in the child's diet can only be answered by common sense, and a knowledge of the exact diet of the individual child. By the time the average child is three or four years old, he is usually getting such a variety of vegetables, fruits and eggs, and so much sunlight, that there seems little need of extra sources. However, a child with marked food dislikes or idiosyncrasies, a frail child, or a child whose diet is too closely regulated by an oversolicitous mother, had best continue with outside vitamin sources even longer.

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PERIARTERITIS NODOSA WITH ASSOCIATED THROMBOCYTOPENIC PURPURA[1]

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BALTIMORE, MD.

Periarteritis nodosa is a disease of unknown etiology involving the smaller arteries in various parts of the body. Kussmaul and Maier (1), first described the periarteritis characterized by multiple nodulations and designated the condition periarteritis nodosa. Since their classical description in 1866 over 200 cases of this disease have been reported in the literature, with the introduction of such descriptive terms as polyarteritis nodosa (2), necrotizing arteritis (3), and necrotizing panarteritis (4). It is now known that histologic changes are not localized in the adventitia of the vessels and, further, that the formation of nodules is not a constant factor. The inflammatory process involves all the coats of the affected arteries in an extensive necrotizing and proliferative process.

Fifteen per cent of the cases of periarteritis nodosa occurs in children. Although the greater majority of cases occur in the period between 20 and 40 years, nevertheless, ages ranging from 3 months to 71 years are on record. The male sex predominates in the ratio of three to one. The condition is unquestionably rare as attested by the infrequency of its recognition in large series of autopsies. At the Los Angeles County Hospital (15), in a series of 10,000 autopsies, during the past 15 years, only one case of periarteritis nodosa is tabulated. Koltz (6) performed 3,000 autopsies before encountering a case. In a group of 2,000 consecutive autopsies at the University of Maryland Hospital there is only one known case showing the typical pathologic lesions of periarteritis nodosa.

None of the many suggested theories of etiology has been accepted. Syphilis was given due consideration by early writers. With the advent of the Wassermann reaction and the methods of demonstrating the spirochete, attempts to show a connection have failed. Repeatedly negative blood-cultures have apparently ruled out the possibility of streptococcic septicemia. Mechanical causes and parasites have been eliminated as possible etiologic agents. It has been suggested that a filterable virus may be the cause of the disease. However, there is no definite proof that this is true.

Twelve years ago considerable clinical and pathologic evidence was brought forward by Opulus (5), to establish a relationship between periarteritis nodosa and rheumatic fever. Approximately ten per cent of reported cases give a preceding history of arthritis or rheumatic fever. A febrile course suggestive of an infectious disease is present in both conditions, yet with persistent negative blood-cultures. Friedberg and Gross (3), in eight cases of periarteritis nodosa, show the presence of typical Aschoff bodies in four. They conclude that the vascular lesions, termed periarteritis nodosa, are a manifestation of rheumatic fever. Recent accumulated evidence shows a clinical and pathologic similarity between the two conditions, thereby tending to place periarteritis nodosa in the "rheumatic group."

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[1] From the Department of Pathology, School of Medicine, University of Maryland.

Periarteritis nodosa is an inflammatory disease of the arterial system, affecting the small arteries and arterioles, producing a coagulative and hyaline necrosis of the media which soon spreads to the intima and adventitia. All layers of the arterial wall show a marked cellular infiltration and granulation tissue formation, together with marked intimal proliferation. Injury to the intima leads to thrombosis and quite frequently there is occlusion of the lumen. Secondary changes such as aneurysmal formation, resulting from medial injury, followed by rupture and hemorrhage are not uncommon. The veins and large elastic arteries escape these degenerative changes. Arkin (20), has traced the pathologic steps in the progression of the disease, subdividing arterial changes into four stages: (1) alterative degenerative; (2) acute inflammatory; (3) granulation tissue; (4) histologically healed end-stage or scar tissue stage. Many patients are seen in the acute phase of the disease. This would explain the absence of gross periarterial nodules in many of the cases. An analysis of the cases reviewed show the vessels involved in the following order of frequency: renal, coronary, hepatic, gastro-intestinal, mesenteric, pancreatic, peripheral and central nervous system. Perhaps vascular lesions of the latter two occur in greater frequency, since many autopsies are incomplete. Further, peripheral vessels are not commonly examined in routine cases, yet cutaneous manifestations are frequently encountered clinically. The disease rarely remains confined to a single organ, rather, generalized involvement is the rule.

This brief discussion of the vascular lesions and their distribution indicates the multiplicity of clinical pictures that are encountered. With such a diffusion of vascular lesions no symptoms or group of symptoms are pathognomonic. Nevertheless, just as certain vessels are involved with greater frequency there is a corresponding group of predominating clinical features. The usual findings are a septic temperature, polyneuritis and polymyositis; hematuria, albuminura and edema; severe abdominal pain, bloody diarrhœa and vomiting. The finding of cutaneous nodules or purpuric spots, adding to such a diversity of clinical manifestations, is highly suggestive. Cerebral symptoms and acute anginal attacks frequently confuse the clinical picture. Attempts to differentiate gastro-intestinal, renal, neuromuscular, cardiac, cerebral and cutaneous forms have not met general acceptance.

Among the laboratory findings a moderate leucocytosis, with an associated eosinophilia, appears as the most striking change. Middleton (16), in one of three reported cases, found the leucocytes ranging from 12,450, with 33% eosinophils, to 32,950 with 72% eosinophils. He includes a case showing 20,700 leucocytes with no eosinophils. Curtis and Coffey's (11), case had 77% eosinophils with a total white count of 19,900. Leucocytosis, though quite frequent, is not always associated with eosinophilia, however, the incidence of the latter, occurring in varying degrees, appears of some diagnostic significance. A secondary anemia is to be expected. The urine shows red blood cells, albumin and casts in a certain percentage of cases. There may also be a diminution in the renal excretion of dye and an elevation in the non-protein nitrogen. Abnormal electrocardiographic tracings and unusual blood sugar curves have not been investigated sufficiently to contribute to the diagnosis of this malady. Positive clinical diagnosis is often dependent upon biopsy of peripheral vessels.

REPORT OF CASE

Clinical history: N. M., white female, age 15, was admitted to the University Hospital on June 25, 1935, with the chief complaint of swelling of the face and feet; coldness and blueness of the feet, legs and hands of two weeks' duration. In December, 1933, the child began to complain of pain and swelling of both ankles, at this time there was some increase in local heat, but no noticeable redness. The edema slowly subsided following confinement to bed, however, the pain continued and within a short time spread to all the joints simultaneously, in the absence of redness, local heat and edema. A fairly constant temperature fluctuating from 102 to 103°F., was associated with the joint symptoms. The child was kept in bed for a period of two months following subsidence of symptoms. Her attending physician made a diagnosis of rheumatic fever, stating the fortunate escape from cardiac complications. In a short while after being up and about her mother noticed a blue splotchiness about her feet and legs. The splotches would fade on pressure but would not completely disappear. Of note, was the occurrence of frequent nose bleeds. In spite of this she began to gain weight and re-entered school. About the first of April, 1935, the skin discolorations appeared on her hands and forearms, she became drowsy, lost her appetite and ran a fever of 102 to 103°. Despite constant bed rest the child grew progressively worse, puffiness of the eyes and a slight swelling of the feet occurred several weeks before admission. Because of the onset of abdominal enlargement and tightness, hospitalization was advised. A review of the systems added the occurrence of night sweats, a poor appetite and habitual constipation. Vomiting and abdominal pain were not experienced. Cardiac symptoms were denied. An occasional frontal headache was noted. A scant flow at the last menstrual period was the only irregularity. The past history revealed measles at the age of four and whooping cough at eight. Tonsillectomy was performed at the age of six as a precautionary measure before entering school.

Physical examination: The patient was an edematous young white female with no evidence of acute distress. A diffuse cyanotic tint appeared on the extremities, more pronounced on the legs, where numerous large and irregular purpuric blotches were conspicuous. These would not fade on pressure. Puffiness of the eyelids and edema of the bulbar conjunctiva were evident. No lesions were observed on ophthalmoscopic examination. Vocal fremitus was lost at the bases, here there was flatness to percussion and the breath sounds were distant. The heart sounds were clear with apparent regularity in rate, rhythm and force. Acceleration of the rate was the only cardiac finding. Enlargement associated with shifting dullness in the abdomen suggested ascites. There was pitting edema about the ankles.

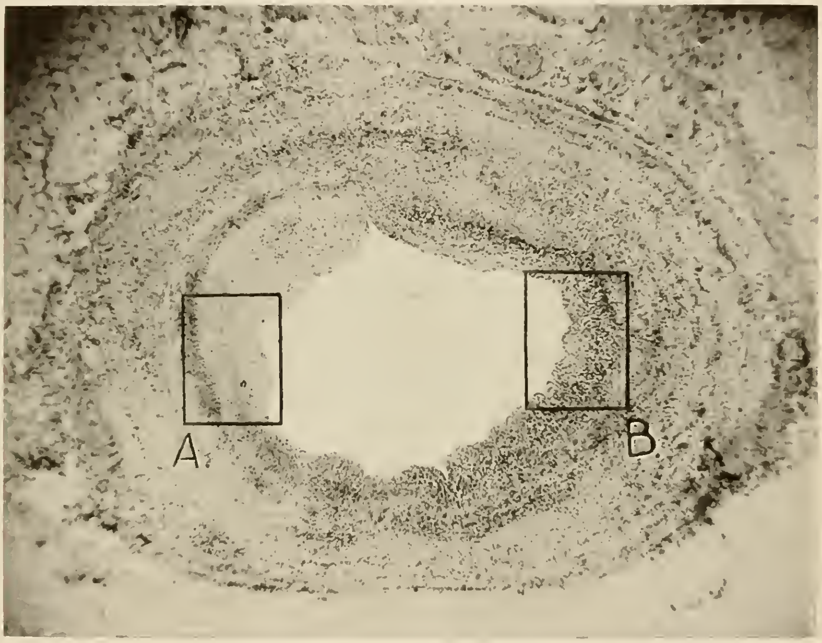

Fig. I. Left Coronary Artery Showing Proliferative Intimitis, Destruction of the Media and Cellular Infiltration, Extending Far Out in the Adventitia

Note the more intense and active reaction on the right side of the vessel. × 50.

Laboratory data: Urinalysis: Specific gravity ranged from 1.008 to 1.014, there was a trace of albumin and microscopically there were occasional red blood cells, white blood cells and casts. The blood examination, on admission, hemoglobin 57.2%; red blood cells, 2,560,000; white blood cells, 8,800; neutrophiles 86%; small lymphocytes 12%; and mononuclears 2%. The blood Wassermann was negative;

non-protein nitrogen 25 mg. %; uric acid 3.4 mg. %; sugar 74 mg. %; and chlorides 260 mg. %. The blood protein was 5.39 mg. %; albumin 2.64 mg. % and globulin 2.74 mg. %. The fragility test showed incipient hemolysis of 0.45 mm. and complete hemolysis 0.25 mm. The control, incipient hemolysis 0.4 mm. and complete hemolysis 0.25 mm. Two days after admission the platelets were 35,300 and reticulocytes 0.6%. Sedimentation rate was rapid, 57.0 mm. at the end of an hour. Bleeding time was 3 minutes and clotting time was 2 minutes 15 seconds. Calcium 7.7 mg. % and phosphorus 2.1%. The course in the hospital was complicated by the accumulation of fluid in both pleural spaces. On several occasions a clear serous fluid was drawn from the chest. The fluid contained a few red blood cells and white blood cells. The quantity removed never exceeded 400 cc. The blood pressure fluctuated from 100 to 120 systolic and 70 to 84 diastolic. On the 6th day the leucocytes dropped to 1,800 with neutrophiles 88%, small lymphocytes 4% and mononuclear 8%. Platelets 83,200. Repeated blood cultures were negative. Throughout the hospital stay the temperature varied from 101 to 104°F., accompanied by a pulse rate of 120 to 140 per minute. The respiratory rate gradually increased from 30 to 50 per minute before death. The patient ran a rapid down hill course and died on the 12th day in spite of supportive treatment and therapy, consisting of calcium gluconate, horse serum and theobromine sodium salicytate. In an attempt to correlate the bizarre manifestations on a common basis, significance was attached to the increase in the extent of the purpura. These, associated with an unusually low platelet count, prompted a clinical diagnosis of thrombocytopenic purpura. The other diagnoses were irrelevant.

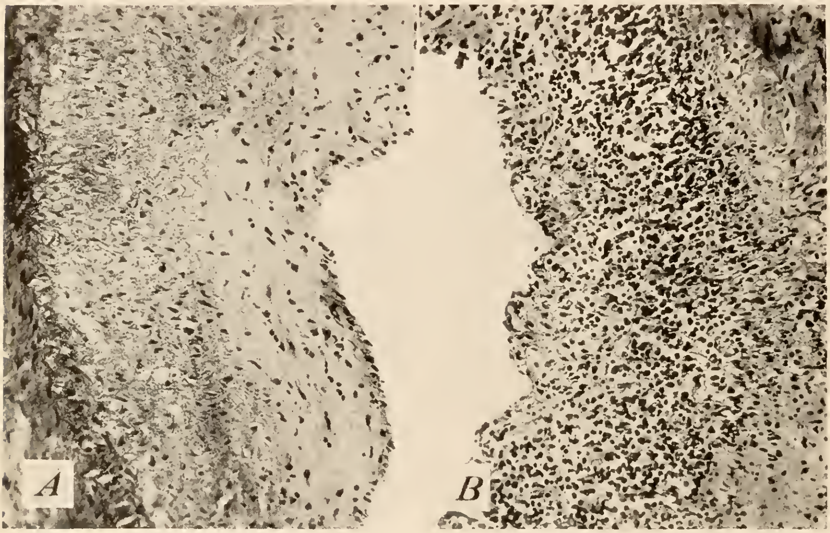

FIG. II. (A) High power photomicrograph of left intimal region, showing late or healing phase with mild lymphocytic infiltration and fibrous organization. × 350.

(B) High power photomicrograph of right intimal region, showing active inflammatory process. Lymphocytes and plasma cells predominate in the fibrino-cellular intimitis. × 350.

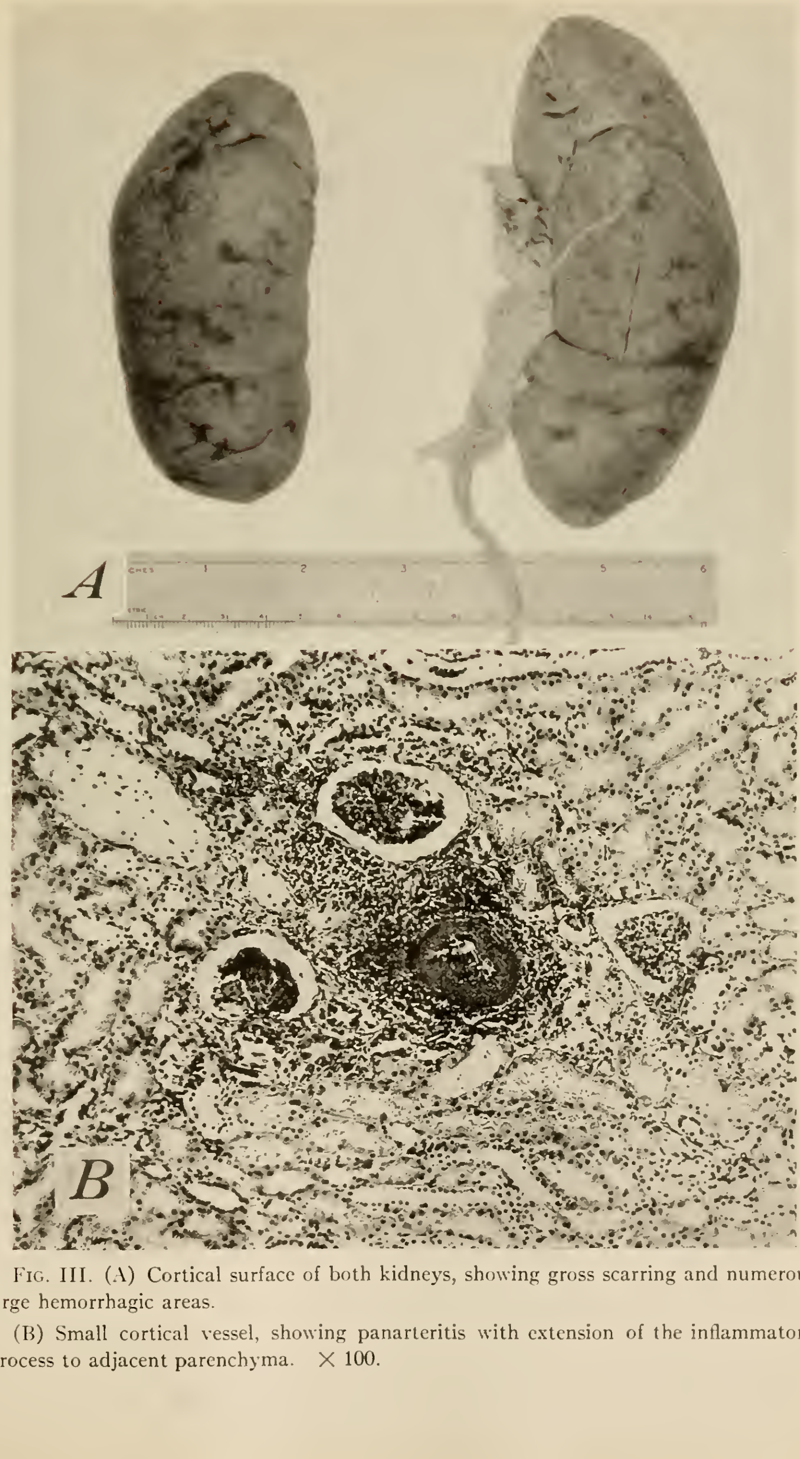

FIG. III. (A) Cortical surface of both kidneys, showing gross scarring and numerous large hemorrhagic areas.

(B) Small cortical vessel, showing panarteritis with extension of the inflammatory process to adjacent parenchyma. × 100.

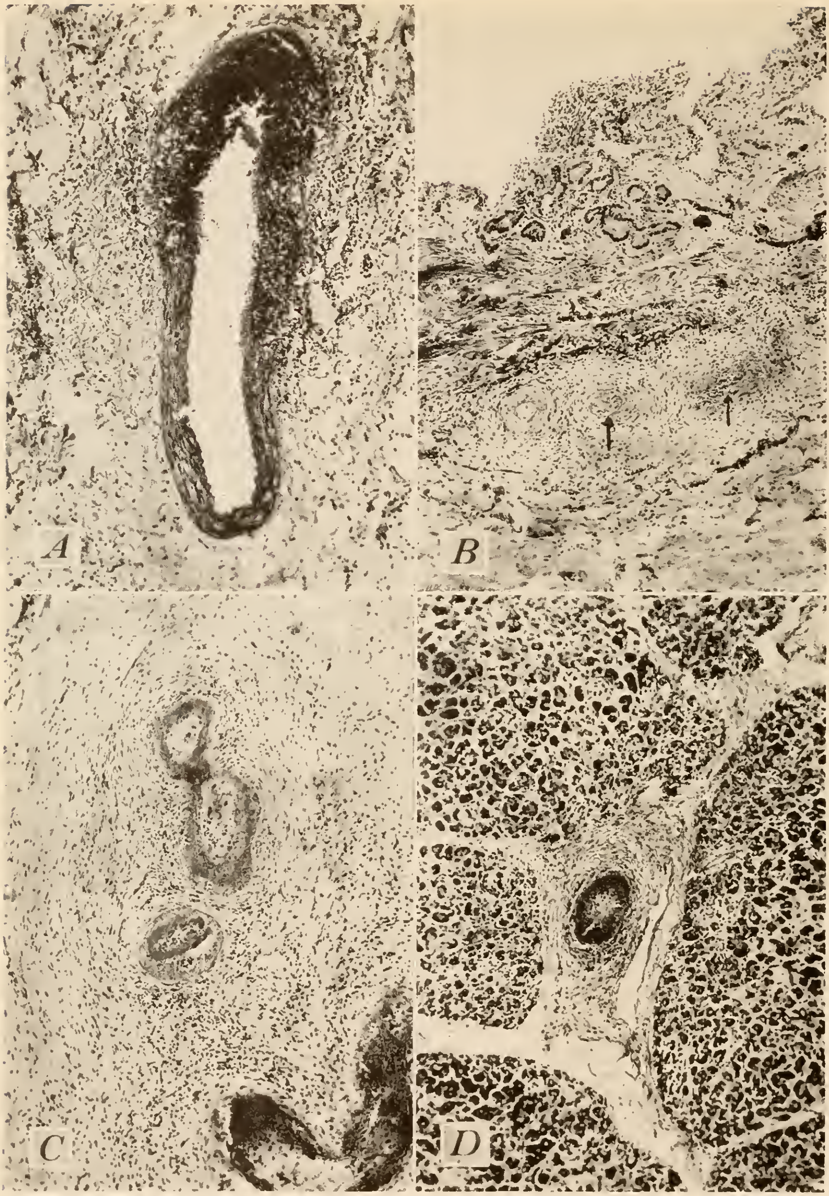

FIG. IV. (A) Small coronary artery, showing an early polyarteritis, involving side of the vessel. The wall has a normal structure in the lower half. × 100.

(B) Gall bladder, showing several old healed vascular lesions. The lumen in two has been reduced to irregular narrow sinuses, containing blood. The mucosa is well preserved. × 100.

(C) Smaller mesenteric vessels in an early phase, showing hyaline necrosis of the media, a fibrinous intimitis and extensive perivascular infiltration. × 100.

(D) Interlobular pancreatic vessel in the acute exudative phase of polyartertis. × 100.

Autopsy (performed 14 hours after death): The body was that of a young white female, measuring 177 cm. in length and weighing approximately 110 pounds. A moderate pitting edema presented in the region of the ankles. There was a large irregularly outlined purplish macular lesion on the lateral surface of the right foot and ankle. Faint purplish blotches were present on the abdomen and chest, along with a diffuse cyanotic tint about the neck and shoulders. The peritoneal cavity contained 2,000 cc. of a light straw colored fluid. A dull purplish discoloration of the colon was seen at the hepatic flexure. The right pleural cavity contained 250 cc. of a clear serous fluid. A similar amount and type of fluid was removed from the left pleural cavity. A few fibrous pleural tags occurred on both sides. The pericardial sac was adherent to both lungs by dense fibrous adhesions. The pericardial sac was obliterated, due to dense fibrous adhesions completely encompassing the heart. The heart had a soft somewhat flabby consistency and weighed 215 gms. All the valves presented a normal structure. The mural endocardium was normal. Bronchopneumonia and congestion occurred in both lungs. The liver had a pale swollen appearance. The gall bladder contained whitish-yellow granular bile. Each kidney weighed 180 gms. The capsule was removed easily, leaving a coarsely nodular and hemorrhagic cortical surface. Distortion of the architecture was evident from the cut surface with numerous thin linear hemorrhagic streaks throughout the entire renal substance. Many discrete pin point hemorrhages were observed in the gastric mucosa. The brain presented no gross changes.

Microscopic examination: The smaller arteries and arterioles in many tissue sections showed degenerative and inflammatory changes. In many instances, as in the coronaries, there was a coagulative necrosis and cellular infiltration in the media. An exudative and productive intimitis produced marked narrowing of the lumen. At some points on the circumference of the coronaries a marked cellular reaction would predominate, while on the opposite side the intima was composed of a wide band of collagenous fibers, containing a few scattered round cells. The adventitia and adjacent tissue was fused into a wide band of granulation tissue, densely infiltrated with plasma cells, lymphocytes, and a few granulocytes. Ashoff bodies were not seen in the myocardium. One of the smaller branches had a normal appearance except for a slight cellular infiltration disrupting the muscle fibers of the media. Other changes consisted of a coagulative and hyaline necrosis of the media with obliterative intimitis and perivascular scarring. Here the vessels presented the healing phase showing little or no inflammatory cell invasion. The small renal arteries were characterized by this latter phase, however, a few, especially the larger vessels, showed an active inflammatory process. Infarction of the parenchyma was quite conspicuous in the kidney, but no thrombotic vessels were observed. Scarring, especially in the perivascular regions, was a prominent change. Vessels similarly affected were found in the liver, gall bladder, pancreas, uterus, and intestines. Completely obliterated vessels were a frequent finding in the gall bladder and intestines. Degenerative and gangrenous changes of the intestinal wall accompanied these lesions. No vascular lesions were encountered in the cerebral and meningeal vessels.

DISCUSSION

Pathologically this is a typical case of periarteritis nodosa, where clinically a diagnosis of thrombocytopenic purpura had been made. The fact that other proven cases of the same condition have been called purpura hemorrhagica deserves some comment. To this end a brief discussion of purpura and its possible relationship to periarteritis is warranted. The purpuras can be roughly divided into two groups, the thrombopenic and the non-thrombopenic. The former occurring either as a definite idiopathic disease or as a secondary symptom. The idiopathic type constitutes a disease entity the synonyms of which are "purpura hemorrhagica," "Werlohof's disease," "essential thrombopenia," "pseudohemophilia," or "idiopathic paucity of platelets." Whereas secondary or symptomatic thrombocytopenic purpura results from a wide variety of recognized conditions occurring particularly in pernicious anemia, myeloid leukemia, diphtheria, and benzol poisoning. Also myeloma, metastatic carcinoma and sarcoma by replacing the bone marrow produce a diminution of platelets in the peripheral blood resulting in purpuric manifestations. A large group of infectious conditions form a basis for secondary thrombocytopenia, such as subacute bacterial endocarditis, typhoid fever and milary tuberculosis. The association of purpura with anaphylaxis, avitaminosis and irradiation is not infrequent. The differentiation of idiopathic and secondary (symptomatic) thrombocytopenic purpura results only after determination of a primary factor as both frequently exhibit a similar blood picture and symptomatology. Whether the purpuric manifestations in this case resulted from periarteritis or other unrecognized causes cannot be determined. Unfortunately bone marrow examination was not done.

Another point of interest in this case was the occurrence of a 3 minute bleeding time. A prolonged bleeding time is characteristic of thrombopenia fluctuating with the platlet count. However, Minot states a normal bleeding time will occur when the platlet count is above 60,000 per cubic millimeter. A platlet count of 83,000 in this case on the day following the test for bleeding may possibly be an explanation for a normal bleeding time.

In the absence of many of the outstanding clinical features, such as polyneuritis, polymyositis, abdominal pain, peripheral nodules and eosinophilia, consideration of periarteritis nodosa would have been quite remote in this case. Even on gross examination of the tissues, during autopsy, the condition was not suspected. Recognition followed frozen section of the kidneys. This was done because of the unusual appearance of these organs. Nevertheless, in the presence of an obscure sepsis, with multiple and bizarre symptoms in an individual, the possibility of periarteritis nodosa should receive attention.

It is quite certain that an ante mortem diagnosis of periarteritis would not have altered the fatal termination in this case. The condition is rare and the diagnosis difficult. However, a correct diagnosis is highly desirable, especially in those cases associated with symptomatic purpura, for while splenectomy is indicated in idiopathic thrombocytopenic purpura, such a procedure has no place in the treatment of the symptomatic type. Of further surgical interest are the many cases in which the gall bladder and appendix have been removed. The true condition is recognized following histologic study. Keegan (21), reports a case with sepsis, tenderness over the right kidney and pus in the urine, in which a diagnosis of a surgical kidney was made with subsequent nephrectomy. Microscopic examination revealed typical lesions of periarteritis nodosa. Many similar experiences emphasize the importance in the differentiation of this condition.

CONCLUSIONS

1. Symptomatic thrombocytopenic purpura may occur as an outstanding feature in periarteritis nodosa.
2. Periarteritis nodosa should be included as a possible causative factor in the production of secondary or symptomatic thrombocytopenic purpura.
3. Renal complications are the most frequent in periarteritis nodosa, occurring in no less than seventy-five per cent of cases.
4. Periarteritis nodosa should be considered in cases of obscure sepsis presenting unusual and bizarre manifestations as polyneuritis, polymyositis, abdominal pain, diarrhoea, and eosinophilia. Associated cutaneous nodules and purpuric eruptions make the diagnosis highly probable.
5. Cutaneous biopsy in many instances will reveal the vascular histopathology.

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ANNOUNCEMENT OF POST-GRADUATE SEMINAR OF THE DEPARTMENT OF PEDIATRICS

June 8th to 27th, 1936

The University of Maryland offers a post-graduate course in Pediatrics, which is planned primarily for the physician in general practice, as well as the physician especially interested in children.

The schedule of the course is given on pages 150–152. Any questions as to further details will be answered by applying to the Dean of the Medical School, University of Maryland, Baltimore.

The course is so arranged that nearby physicians will find it possible to spend the morning at the University and then return to their practice for the afternoon, if the laboratory course is not desired.

Requirements for admission: The applicant must be a registered physician in good standing. Preference will be given to physicians registered in Maryland.

Fees and Tuition: A matriculation fee of $50.00 will be charged to all registrants.

Registration and Matriculation: Monday, June 8, 1936, 8.30 A.M., northeast corner of Lombard and Greene Streets, Baltimore.

Application should be made as early as possible to the Dean of the Medical School, as the enrollment will be limited.

PEDIATRIC POST-GRADUATE SCHEDULE

Prof. C. Loring Joslin, Director

FIRST WEEK

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9:00–10:00	Anatomy and Physiology of the Normal Child *Dr. Howell*	Infant Feeding *Dr. Joslin*	Surgical Diagnosis in Children *Dr. Shipley*	Poliomyelitis *Dr. Jaffe*	Infant Feeding *Dr. Joslin*	X-ray Conference *Dr. Walton* *Dr. Bradley*
10:00–11:30	Bedside Rounds Babies' Wards *Dr. Joslin*	Bedside Rounds Babies' Wards *Dr. Jaffe*	Child Guidance *Dr. Newell*	Bedside Rounds *Dr. Joslin*	Clinical Pathological Conference *Dr. Spencer* *Dr. Bradley*	Allergy Clinic *Dr. Bubert*
11:30–12:30	Electrocardiography *Dr. Love*	Diseases of the Genito-urinary Tract in Children *Dr. Toulson*	Neurological Clinic *Dr. Spear*	Clinic Nose and Throat Diseases *Dr. Looper*	Ear Clinic *Dr. Downey*	Tuberculosis Clinic *Dr. Finkelstein*
12:30–1:00	Lunch					
1:00–2:00	Clinical Pediatrics Dispensary	Clinical Pediatrics Dispensary	Clinical Pediatrics Dispensary	Skin Clinic *Dr. Robinson*	Clinical Pediatrics Dispensary	Clinical Pediatrics Dispensary
2:00–4:00	Laboratory Technique and Diagnosis *Dr. Huck*	Laboratory Technique and Diagnosis *Dr. Huck*	Bone and Joint Diseases Kernan's Hosp. *Dr. Voshell*	Laboratory Technique and Diagnosis *Dr. Huck*	Laboratory Technique and Diagnosis *Dr. Huck*	

SECOND WEEK

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9:00–10:00	Preventative Pediatrics *Dr. Howell*	Nephritis *Dr. Bradley*	Diabetes in Children *Dr. Stein*	Rocky Mountain Spotted Fever Typhus Fever *Dr. Jaffe*	Pneumonia *Dr. Bradley*	Diseases of the Newborn *Dr. Finkelstein*
10:00–11:30	Bedside Rounds Children's Wards *Dr. Jaffe*	Bedside Rounds Children's Wards *Dr. Joslin*	Child Guidance *Dr. Newell*	Clinic Typhoid Fever in Children *Dr. Joslin*	Ward Rounds Mercy Hospital *Dr. Friedenwald*	Allergy Clinic *Dr. Bubert*
11:30–12:30	Child Hygiene *Dr. Warthen*	Tuberculosis Clinic *Dr. Finkelstein*	Neuro-surgery Operations or Lecture *Dr. Bagley*	Clinic Orthopedics *Dr. Voshell*	Clinic Malnutrition *Dr. Joslin*	Cardiac Clinic *Dr. Jaffe*
12:30–1:00	Lunch					
1:00–2:00	Clinical Pediatrics Dispensary	Clinical Pediatrics Dispensary	Contagious Diseases Sydenham Hosp. *Dr. Tull*	Bedside Rounds City Hospital *Dr. Goodwin*	Clinical Pediatrics Dispensary	Clinical Pediatrics Dispensary
2:00–4:00	Laboratory Technique and Diagnosis *Dr. Huck*	Laboratory Technique and Diagnosis *Dr. Huck*	Contagious Diseases Sydenham Hosp. *Dr. Tull*	Bedside Rounds City Hospital *Dr. Goodwin*	Laboratory Technique and Diagnosis *Dr. Huck*	

THIRD WEEK

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9:00–10:00	Oral Surgery in Children *Dr. Bay*	Clinic Diarrhea Dysentery *Dr. Joslin*	Diseases of Blood and Lymphatic System *Dr. Bradley*	Care of the Normal Infant and Child *Dr. Howell*	Clinic Intracranial Hemorrhage in Newly-born *Dr. Joslin*	Demonstration Diet Kitchen *Miss Baldwin*
10:00–11:30	Bedside Rounds Babies' Wards *Dr. Joslin*	Bedside Rounds Children's Wards *Dr. Jaffe*	Bedside Rounds Children's Wards Mercy Hospital *Dr. Friedenwald*	Bedside Rounds Children's Wards *Dr. Joslin*	Bedside Rounds Children's Wards *Dr. Jaffe*	Clinical Pathological Conference *Dr. Spencer* *Dr. Bradley*
11:30–12:30	Communicable Diseases *Dr. Glick*	Traumatic Surgery Incl. Fractures *Dr. Shipley*	Bedside Rounds Children's Wards Mercy Hospital *Dr. Friedenwald*	Physical Diagnosis *Dr. Finkelstein*	Physio-therapy	Pediatric Conference *Dr. Joslin*
12:30–1:00	Lunch					
1:00–2:00	Clinical Pediatrics Dispensary	Syphilis Clinic *Dr. Robinson*	Clinical Pediatrics Dispensary	Bedside Rounds City Hospital *Dr. Goodwin*	Clinical Pediatrics Dispensary	Clinical Pediatrics Dispensary
2:00–4:00	Laboratory Technique and Diagnosis *Dr. Huck*	Laboratory Technique and Diagnosis *Dr. Huck*	Bronchoscopic Clinic *Dr. Looper*	Bedside Rounds City Hospital *Dr. Goodwin*	Laboratory Technique and Diagnosis *Dr. Huck*	

ANNOUNCEMENT OF POST-GRADUATE SEMINAR OF THE DEPARTMENT OF CARDIOLOGY

June 1st to 20th, 1936

The University of Maryland offers a post-graduate course in Diseases of the Cardiovascular System. This course is planned for the physician who wishes to familiarize himself with modern concepts of heart disease and related subjects and consists of three weeks of intensive study. It offers instruction in the pathology of cardio-vascular disease, electrocardiography, roentgenology and other mechanical methods of studying patients, the clinical study of such patients, in general and special therapeutic procedures, and in theoretic considerations.

The schedule of the course is given on pages 154–156. The Department of Cardiology reserves the right to make such changes in the schedule as may be deemed necessary. Any questions as to further details will be answered on application to the Dean of the Medical School, University of Maryland, Baltimore. The course is open to registered physicians.

Tuition: A fee of $100.00 will be charged to all registrants.

Registration: Monday, June 1, 1936, 9.00 A.M., northeast corner of Lombard and Greene Streets, Baltimore, Md.

Those wishing to enroll in this course should apply as early as possible to the Dean of the Medical School, as the enrollment will be limited.

CARDIOLOGY POST-GRADUATE SCHEDULE

FIRST WEEK

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9:00–10:00	Registration	Review of physiology of Heart *Dr. Love*	Lecture Arrhythmias *Dr. Love*	Lecture Arrhythmias *Dr. Love*	Lecture Arrhythmias *Dr. Love*	Lecture Classification of Heart Disease *Dr. Love*
10:00–11:00	Ward Class Cardiovascular Examination of Patients *Dr. Pincoffs*	Ward Class *Dr. Sprunt*	Ward Class *Dr. Stein*	Ward Class *Dr. Legge*	Heart Disease in Children *Department of Pediatrics*	Surgery of Heart *Dr. Shipley*
11:00–12:30	Cardiac Dispensary	Cardiac Dispensary	Cardiac Dispensary	Cardiac Dispensary	Cardiac Dispensary	Review of Pharmacology of Cardiovascular Drugs *Dr. Krantz*
12:30–1:30	Lunch	Lunch	Lunch	Lunch	Lunch	
1:30–2:30	Lecture Electrocardiography *Dr. Love*	Electrocardiographic Technique *Dr. Love*	Electrocardiography—Lantern Slide Demonstration *Dr. Love*	Electrocardiography *Dr. Love*	Electrocardiography *Dr. Love*	
2:30–3:30	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	Laboratory Pathology	
3:30–5:00	Individual Work with Patients	Individual Work with Patients	Individual Work with Patients	Individual Work with Patients	Individual Work with Patients	

SECOND WEEK

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9:00–10:00	Basal Metabolism Demonstration and Theory *Dr. Johnson*	Lecture Endocarditis, Pericarditis *Dr. Pincoffs*	Lecture Endocarditis, Pericarditis *Dr. Pincoffs*	Lecture Syphilitic Heart Disease *Dr. Love*	Lecture Arteriosclerotic Cardiovascular Disease *Dr. Pincoffs*	Lecture Angina Pectoris and Coronary Thrombosis *Dr. Pincoffs*
10:00–11:00		Chronic Valvular Disease *Dr. Love*	Chronic Valvular Disease *Dr. Love*	Cerebral Vascular Surgery *Dr. Bagley or Dr. Coblenz*	Heart Disease in Pregnancy *Department of Obstetrics*	Laboratory Pathology of Renal Disease *Dr. Love*
11:00–12:30	Cardiac Dispensary	Cardiac Dispensary	Treatment of Syphilitic Heart Disease *Dr. Robinson*	Treatment of Syphilitic Heart Disease *Dr. Robinson*	Treatment of Syphilitic Heart Disease *Dr. Robinson*	
12:30–1:30	Lunch	Lunch				
1:30–2:30	Electrocardiography *Dr. Love*	Electrocardiography *Dr. Love*	Lunch	Lunch	Lunch	
2:30–5:00	Vital Capacity Determination Individual Work with Patients or Demonstrations of Procedures such as Thoracentesis, Pericardial tap, etc.	Determination Circulation Rate	Intravenous Therapy	Bacteriology and Blood Culturing *Dr. Johnson*	Bacteriology and Blood Culturing *Dr. Johnson*	

THIRD WEEK

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9:00–10:00	Lecture Endocrine Disturbances affecting Heart *Dr. Sprunt*	Lecture Hypertension *Dr. Love*	Lecture Heart Failure *Dr. Love*	Lecture Cardiac Neuroses *Dr. Love*	Lecture Renal Diseases *Dr. Miller*	Lecture Renal Diseases *Dr. Miller*
10:00–11:00	Surgery of Peripheral Vascular Lesions *Dr. Shipley*	Surgery of Sympathetics *Dr. Aycock*	Laboratory X-ray	Laboratory X-ray	Round Table Conference	Round Table Conference
11:00–12:30	X-ray Conference	X-ray Conference				
12:30–1:30	Lunch	Lunch			Lunch	
1:30–2:30	Congenital Heart Disease *Dr. Love*	Electrocardiography *Dr. Love*	Lunch	Lunch	Electrocardiographic Conference *Dr. Love*	
2:30–3:30		Lecture Cerebral Vascular Lesions *Dr. Arnold*	Laboratory Cerebral Vascular Lesions *Dr. Arnold*	Ward Work		
3:30–5:00	Individual Work with Patients	Individual Work with Patients		Laboratory Electrocardiography	Ward-Study Electrocardiography Laboratory	

PROCEEDINGS

OF THE

UNIVERSITY OF MARYLAND BIOLOGICAL SOCIETY

Officers of the Society

H. BOYD WYLIE, *President*
JOHN C. BAUER, *Secretary*
O. G. HARNE, *Treasurer*
ROLAND BAMFORD, *Secretarial Representative*
HARVEY G. BECK, JOHN C. KRANTZ, JR., E. G. VANDEN BOSCHE, FRANK J. H. FIGGE, *Councillors*

SIXTY-NINTH PROGRAM MEETING

The Sixty-ninth Program Meeting of the University of Maryland Biological Society was held Tuesday evening, May 21, 1935, in Chemical Hall in the School of Medicine. President Appleman presided. Two papers were presented, "Outline of the Surgical Treatment of Angina Pectoris" by Thomas B. Aycock, M.D., and "Pulmonary Artery Pressures in Open Pneumothorax" by Cyrus F. Horine, M.D. An abstract of Dr. Horine's paper appears below:

PULMONARY ARTERY PRESSURES IN OPEN PNEUMOTHORAX

BY CYRUS F. HORINE,* M.D.

The pulmonary artery pressures were measured in the closed chest. Open pneumothorax was then produced by making an incision in the right chest. The intrapleural pressure changes caused an increase in pulmonary systolic and diastolic pressures during inspiration and expiration. The greatest increase in pressure occurred in diastole during inspiration. In six experiments the respirations increased 100 per cent. The pulse rate was decreased 12 per cent.

THE SEVENTIETH PROGRAM MEETING

The Seventieth Program Meeting of the University of Maryland Biological Society was held Thursday, October 24, 1935, at 8:15 P.M. in the amphitheatre of the University Hospital.

Dr. Oliver Kamm, Scientific Director of Parke, Davis and Co., was the guest speaker of the evening. A large audience, including several of our friends from the Johns Hopkins University, was present. Preceding the Program Meeting, Dr. Kamm was entertained at an informal dinner given in the dining room of the Hospital, at which time Acting President Byrd addressed the Society.

The meeting was called to order by President Appleman and Dr. Krantz presented the speaker. Dr. Kamm spoke on "The Relationship of the Endocrine Glands to Water Metabolism."

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* From the Department of Surgery, School of Medicine, University of Maryland

NINTH ANNUAL MEETING

Tuesday, November 19, 1935, the Ninth Annual Meeting of the University of Maryland Biological Society was held in the Pharmacy Building. The meeting was called to order by President Appleman. The regular business of the Society was conducted and the following officers were elected to serve for the ensuing year:

President	H. BOYD WYLIE
Treasurer	O. G. HARNE
Secretary	JOHN C. BAUER
Councillor	FRANK J. H. FIGGE

SEVENTY-FIRST PROGRAM MEETING

The Seventy-first Program Meeting of the Society was held at 8:30 P.M., Tuesday, November 19, 1935, in the Pharmacy Building. President Wylie presided. An abstract of the work reported by Dr. M. R. Thompson on this occasion appears below.

THE NEW ERGOT ALKALOID

BY MARVIN R. THOMPSON,* Ph.D.

The history of the search for the constituent of Ergot responsible for the prompt and intense oxytocic activity of the drug was traced, the most important stepping-stones being presented as follows:

1875—The first isolation of an alkaloid (ergotinine) by Tanret;
1906—The discovery of ergotoxine by Barger;
1920—The discovery of ergotamine and ergotaminine by Stoll;
1931—The discovery of pseudo-ergotinine by Smith and Timmis;
1931—The discovery of sensibamine by Wolf; and
1934—The discovery of ergoclavine by Küssner.

Experimental evidence was set forth showing that none of the above constituents possessed the prompt and intense oxytocic activity characteristic of the whole drug. The demonstration of this fact by the author at the University of Maryland, and by Moir in England in 1932, led to a renewed search for the true active principle which culminated in success in 1934 with the discovery and isolation of crystalline ergostetrine by the author, the new principle being simultaneously identified as a new alkaloid. Since then, in 1935, three other groups of workers have reported the isolation of the same new alkaloid, each group assigning different names to the substance because of their belief that it was possible that slight differences among the four named substances may be disclosed with further study. The name "ergometrine" was assigned by the British workers, Dudley and Moir, "ergotocin" by the Chicago workers, Kharasch and Legault, and "ergobasine" by the Swiss workers, Stoll and Burckhardt. Evidence was described by the author which showed that all four names have been assigned to the same substance originally named "ergostetrine" by him. Authentic specimens of each of the four named substances were obtained and recrystallized twice under identical conditions. Under identical technique, the four specimens were shown to be indistinguishable as to melting point, solubility, optical activity, color reactions, activity on cat or dog blood pressure, activity on guinea pig, rabbit and cat uterus (*in situ* or isolated), and on the cock's comb. A demonstration of the action of ergostetrine on the isolated rabbit and guinea pig uterus was conducted during the presentation of the paper.

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* From the Department of Pharmacology, School of Pharmacy, University of Maryland.

The different official preparations of Ergot were discussed from the standpoint of their content of the various constituents, emphasizing that the official methods of bioassay and standardization do not specifically measure the true active principle, ergostetrine, and therefore that such preparations, although they usually contain this principle, contain an amount which is unstandardized and extremely variable, making intelligent dosage impossible. The need for an early correction of this public health hazard was stressed.

Seventy-Second Program Meeting

The Seventy-second Program Meeting of the Society was held Tuesday, December 17, 1935, in the School of Pharmacy. President Wylie presided. Dr. Magnus I. Gregersen was the speaker of the evening. An abstract of Dr. Gregersen's paper appears below.

THE DETERMINATION OF PLASMA VOLUME WITH DYES: A PROBLEM IN COLORIMETRY

By Magnus I. Gregersen,* Ph.D.

Professor of Physiology, School of Medicine, University of Maryland

The dye-method of determining plasma volume (Keith, Rowntree and Geraghty, 1915) involves a difficult problem in colorimetry, because the plasma itself is not perfectly colorless. Furthermore, the plasma may be turbid with lipemia or tinted with hemoglobin, and if the determinations are repeated at frequent intervals, it will contain large amounts of "residual dye." The errors which these conditions introduce when one attempts to estimate the plasma dye concentration with the Duboscq colorimeter or Bürker's compensating colorimeter have made it necessary to resort to spectrophotometry.

So far as the simple colorimeter is concerned, it has been demonstrated that the direction and magnitude of the error caused by natural plasma color or residual dye depend upon the relation between the concentration of dye in the standard and unknown, i.e., upon the strength of standard which happens to be used (Gregersen). If the residual dye is large in amount and is ignored (for method of correction see H. P. Smith, 1920), the apparent plasma volume may be more than 25 per cent above or below the true volume. Theoretically, the Bürker compensating colorimeter should correct for the natural plasma color and residual dye, but slight turbidity of the plasma gives rise to bizarre results. Furthermore, it is impossible to correct for hemolysis with this instrument.

With the spectrophotometer the measurements of color strength are made in absolute terms. No comparison standard is required. The absorption due to the solvent, lipemia or residual dye is cancelled by measuring directly the difference in optical density between the control and dye sample. With the spectrophotometer a correction may also be made for hemolysis (Graff and Clarke, 1931) but this is laborious. In order to avoid it, we have abandoned the use of red dyes and have employed instead the blue dye T-1824, which has a maximal spectral absorption at 620–630 mu. Hemoglobin adds very little to the optical density of a solution in this range of the spectrum and can, therefore, be ignored unless it happens to be present in the samples in large amounts. T-1824 has the further advantage that it disappears from the plasma very slowly (5–8 per cent per hour) (Gregersen, Gibson and Stead, 1935). It is non-toxic in doses 100 times greater than those required for single determinations (Gibson and Gregersen, 1935).

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* From the Department of Physiology, Harvard Medical School.

Generally speaking, the vital dyes which have been used for estimating plasma volume display marked changes in their spectral absorption curves when the composition of the solvent is altered with regard to salt or protein. As a rule the optical density is greater in water than in either salt or plasma solutions; but when protein has been added, changes in salt concentration within physiological limits no longer have any significant effect on the color. In the past, several investigators who used compensating colorimeters failed to prepare their standards in plasma solution and as a result their values for plasma volume are probably too high (10–25 per cent).

Centrifugation (30 minutes at 3000 rpm.) of blood containing a known amount of T-1824 leaves 4 per cent of the dye unaccounted for in the plasma above the cells. Since coagulation of plasma or whole blood fails to remove T-1824 from solution, and since serum samples yield dye values 3 to 5 per cent higher than those obtained by the plasma technique (involving addition of isotonic anticoagulant and depending upon the hematocrit for the correct dilution factor), it appears that the 4 per cent loss of dye is due to the trapping of plasma among the cells after centrifugation, and not to absorption of dye by the red cells (Gregersen and Schiro).

Seventy-Third Program Meeting

The Seventy-third Program Meeting of the Society was held Tuesday, January 21, 1936, in the School of Medicine. President Wylie presided. Papers were presented from the departments of bacteriology and physiology of the School of Medicine, abstracts of which appear below.

A business meeting was held preceding the Program Meeting at which time Magnus Gregersen, Ph.D., Professor of Physiology in the University of Maryland School of Medicine, and Ronald Bamford, Ph.D., Associate Professor of Botany in the University of Maryland, were elected to ordinary membership.

THE NERVE PATHWAYS INVOLVED IN THE PALATINE AND PHARYNGEAL RESPIRATORY REFLEXES OF THE CAT

By Harry A. Teitelbaum, M.D., F. A. Ries, M.D., and E. Lisansky,* B.A.

Mechanical stimulation of the pharyngeo-palatine mucosa of the cat causes an acceleration of respiration in most cases. In some cases an inhibitory response is also normally present. Cocaine applied locally abolishes first the hyperpneic response, and then the inhibitory response. Section of the glossopharyngeal and Vidian nerves bilaterally abolishes the accelerator response, but leaves the inhibitory response intact. Bilateral section of the glossopharyngeal nerves does not abolish the palatine accelerator respiratory reflex, but it does abolish the pharyngeal accelerator reflex. Section of the Vidian nerves abolishes the palatine accelerator reflex, however. The pharyngeal inhibitory reflex which persists after abolition of that of respiratory acceleration, is abolished by bilateral vagotomy above the nodose ganglia; or by section of the pharyngeal branches of the vagus nerve. The superior laryngeal nerves may also be involved. The palatine inhibitory reflex is abolished by section of the greater palatine nerves, which are branches of the maxillary division of the trigeminal nerve.

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* From the Department of Physiology, University of Maryland, Medical School.

RELATIONSHIP BETWEEN ELECTROPHORETIC MIGRATION VELOCITIES, THE VIRULENCE AND THE TYPES OF THE DIPHTHERIA AND DIPHTHERIA-LIKE BACILLI

By K. Pierre Dozois, M.S., and K. F. Rauss,* M.D.

These studies were made to ascertain whether the electrophoretic migration velocity measurements made on microörganisms grown on Löfflers medium for 24 hours might be of value in routine work for determining the virulence of the diphtheria and diphtheria-like bacilli.

With the use of the Kunitz modification of the Northrop-Kunitz Microcataphoresis Cell electrophoretic measurements were made on 60 diphtheria and 10 diphtheroid strains.

It was found that the diphtheroid strains showed the greatest velocity, the avirulent the least and the virulent strains represented a medium velocity. The borderline between the zones (diphtheroid, avirulent and virulent diphtheria) may not be sharply drawn because of the interchange of the strains located in the velocity classes in the vicinity of the borders.

These determinations showed a 14 per cent error as compared to the virulence tests carried out on guinea pigs. Because of the errors, the electrophoretic method in its present form, cannot be used in routine work. The variation of the virulence within the 3 diphtheria types was not demonstrable.

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* From the Department of Bacteriology, University of Maryland School of Medicine; and the State Hygienic Institute, Budapest, Hungary.

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The names listed above are officers for the term beginning July 1, 1935, and ending June 30, 1936.

FIFTIETH ANNIVERSARY CLASS OF 1886

To the Graduates of the Classes of 1886 of the Medical Schools united under the University of Maryland, School of Medicine and College of Physicians and Surgeons:

This spring will mark the Jubilee of our graduation. Those of us who have survived the tempests of the years, look forward to this joyous event and wish to learn about the welfare of our comrades of the days of yore. Will you send a short account of your professional pilgrimage to the undersigned,—who will publish this material in the Bulletin,—so that all of us shall know how all of us have fared.

Harry Friedenwald,
1212 Eutaw Place, Baltimore.

FAMOUS SCIENTIST VISITS UNIVERSITY MEDICAL SCHOOL

On Saturday January 18th, Dr. Bernardo A. Houssay, Profesor de Fisiologia de la Facultad de Medicina de la Universidad de Buenos Aires, visited the various preclinical departments of the Medical School. Dr. and Mrs. Houssay were entertained at tea by Dr. and Mrs. Uhlenhuth in the department of anatomy. Later Dr. Houssay visited the departments of pharmacology and physiology. In the evening our distinguished South American guests were entertained at dinner in the home of Dr. and Mrs. Frank M. Figge.

Dr. Houssay is a distinguished scientist and his recent investigations have attracted world-wide admiration. He showed that depancreatized and hypophysectomized dogs manifested a mitigation of the symptoms of diabetes. He thus pointed out the important rôle of the hypophysis in carbohydrate metabolism and its possible diabetogenic influence.

REUNION CLASS OF 1916

The lid will be off at the Alumni Banquet in June.

Baltimore members of the Class of 1916 are making arrangements for their 20th anniversary.

Since this is their first re-union, it is going to be a *real* one—crab feasts, boat trips, the whole works.

Wives and children will be entertained by the wives of the Baltimore delegation.

The Reunion of 1916 will be a *wow*.

ITEMS

The following Massachusetts alumni hold offices in their respective district medical society:

- Doctor Hanford Carvell (B.M.C., 1910), Gloucester—President of Essex South District.
- Doctor T. B. Alexander (B.M.C., 1901), Scituate—President of Norfolk South District.
- Doctor J. H. Weller (P. & S., 1909), Bridgewater—Librarian of Plymouth District.
- Doctor E. P. Disbrow (P & S., 1908), Worcester—Treasurer of Worcester District.

Doctor Benjamin F. Tefft (U. of M., 1905) of West Warwick, Rhode Island was elected president of the Rhode Island Medico-Legal Society at its fiftieth anniversary meeting at Providence in June last.

Doctor Michael J. Nester (P. & S. 1905) of Providence, Rhode Island is Superintendent of Health in that city.

According to the New England Journal of Medicine, Doctor Reid Hunt (P. & S. 1896) of Boston has resigned as Professor of Pharmacology at Harvard Medical School, effective September, 1936, when he will become emeritus professor.

The following Massachusetts Alumni are District Councillors of the Massachusetts Medical Society:

- Doctor A. H. Wright (U. of M. 1906)—Northfield
- Doctor Benjamin Parvey (B.M.C. 1907)—Boston
- Doctor J. C. Austin (P. & S. 1896)—Spencer

The next annual luncheon-meeting of Massachusetts Alumni of Baltimore Medical College, College of Physicians and Surgeons, and the University of Maryland Medical School will be held in Springfield June 9th, 1936, on the occasion of the Annual Meeting of the Massachusetts Medical Society in that city June 8–10th. Instead of confining invitations to Massachusetts graduates, as has been done in the past two years, invitations will be extended to the five hundred alumni practising in the six New England states. Further plans will be announced by letter and through the columns of the New England Journal of Medicine in May.

Doctor Thomas F. O'Brien (U. of M. 1916) of 619 Park Street, Hartford, Connecticut, was recently named acting Health Commissioner of that city.

The Baltimore Medical Club of New York held its Eleventh Annual Dinner, December 12th, 1935, at the Golden Eagle Restaurant, 62 West 9th Street, near 6th Avenue, New York. The program was as follows:

I. Dr. Clyde A. Clapp, Professor of Ophthalmology, University of Maryland; Associate Professor of Ophthalmology, Johns Hopkins School of Medicine: "Some Interesting Problems Relating to the Crystalline Lens and Cataract."

II. Variety entertainment.

District Representatives are:

Brooklyn—Dr. I. P. A. Byrne, 1071 Lorimer Street.
Dr. A. A. Trynin, 4711 12th Avenue.
Bronx—Dr. N. J. Gould, 940 Grand Concourse.
Long Island—Dr. H. M. Biffar, 1825 123rd Street, College Point.
New Jersey—Dr. C. M. Peters, 2770 Boulevard, Jersey City.
Dr. Alfred Stahl, 55 Lincoln Park, Newark.
Dr. W. M. Winters, 288 Broadway, Paterson.
Dr. M. Tomaiuoli, Weehawken.
Connecticut—Dr. W. J. O'Hara, 361 Barnum Avenue, Bridgeport.

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The editors take this opportunity to thank the librarian, Mrs. Ruth Lee Briscoe, for her preparation of the index to the current volume of the BULLETIN.

DEATHS

Arnold, Everett Odell, Corpus Christie, Tex.; B. M. C., class of 1909; veteran of the Spanish-American and World Wars; formerly of the U. S. Public Health Service and medical examiner of the U. S. Veterans' Bureau; aged 61; died recently of tetanus.

Baker, Julian Meredith, Tarboro, N. C.; class of 1879; past president and secretary of the Medical Society of the State of North Carolina; formerly member of the State Board of Medical Examiners and State Board of Health; past president of the Edgecomb County Medical Society; for many years chairman of the county board of education; fellow of the American College of Surgeons; aged 77; died, October 19, 1935, of coronary thrombosis.

Ball, Frederick Spencer, Ontario, Calif.; P. & S., class of 1904; University of the City of New York Medical Department (1895); aged 63; died, in November, 1935, of cerebral hemorrhage and malignant hypertension.

Ballou, Ambrose Roche, Boston, Mass.; B. M. C., class of 1905; aged 54; died, December 4, 1935, of cardiac disease.

Bastian, Joseph W., Wilmington, Del.; B. M. C., class of 1896; past president of the Newcastle County Medical Society; aged 67; died, December 7, 1935, of septicemia.

Bissell, Dougal, New York, N. Y.; class of 1888; aged 71; died, December 3, 1935, of cerebral embolism and thrombosis of the right leg. Dr. Bissell, a son of Titus Lucretius and Anna Threadcraft Thompson Bissell, was born in Summerville, S. C. After receiving a B.S. from the University of South Carolina in 1885, he entered the Medical School of the University of Maryland and was graduated with the degree of M.D. in 1888. Five years later he was graduated from the Woman's Hospital of New York. Dr. Bissell began his medical practice at Mars Bluff, S. C., whence he removed to New York in 1891. He was a past president of the New York Obstetrical Society, the Manhattan Medical Society, the Baltimore Medical Society, composed of the graduates of the several Baltimore medical schools practicing in New York, and of the Woman's Hospital Alumni Association; a founder and fellow of the American College of Surgeons and a member of the American Gynecological Society, the New York Academy of Medicine, the American Medical Association, the Medical Society of the State of New York and the New York County Medical Society. He also was a member of the Society of Mayflower Descendants, the sons of the Revolution, the Southern Society of New York, etc. Appointed a surgeon at the Woman's Hospital, N. Y., in 1910, he served that institution with distinction until his retirement in 1929. He is credited with having developed several gynecological operations. In 1928, he read a paper, on invitation, before the Royal Academy of Medicine, in London. Surviving him are his widow, the former Helen Nutting of New York, whom he married on November 21, 1906, a daughter and four sons. Dr. Bissell was a fine gentleman, highly regarded by all who knew him, and extremely liberal in all matters pertaining to life. He was one of our outstanding alumni, a credit to the profession which he adorned and a staunch exponent of the finest traditions of our guild.

Bower, George B. M., Fort Wayne, Ind.; Class of 1887; aged 73; died, December 28, 1935, of uremia and prostatic obstruction.

Chappelier, Harry C., Hughesville, Md.; class of 1897; past president of Charles County Medical Society; aged 62; died, December 8, 1935, of bronchopneumonia and empyema of the gall-bladder. Dr. Chappelier was a brother of Dr. Frederick D. Chappelier, Hughesville, Md. class of 1905 and president of the Medical and Chirurgical Faculty of the State of Maryland.

Coffey, Daniel David, Chicago, Ill.; class of 1903; for many years manager of the Chicago State Hospital; aged 55; died, November 22, 1935, of myocarditis.

Coleman, Alexander Stuart Matheson, Douglas, Ga.; class of 1914; a former interne in the University of Maryland Hospital; aged 46; died, November 15, 1935. Dr. Coleman married Dorothy M. Weber, class of 1914, University of Maryland Training School for Nurses.

Deford, Paul Fenimore, Pasadena, Calif.; class of 1889; aged 68; died, September 21, 1935, of coronary thrombosis. Dr. Deford was born in Baltimore, Md. and was graduated from the University of Maryland in 1889 with the highest honors of his class. Later he took post-graduate work at the Johns Hopkins University, where he specialized in the diseases of the eye, ear, nose and throat. He also was graduated from the Southern Homeopathic College in 1892. After graduating, he practised his profession for 13 years in Baltimore. He then removed to Pasadena where he has resided for the past thirty-five years. He is survived by his wife, Bertha Grosscup Deford, whom he married in Baltimore, two sons and four daughters.

Eubanks, Walter S., Greenwood, S. C.; P. & S., class of 1891; aged 66; died, December 6, 1935, of pneumonia.

Flowers, Clarence A., Wendell, N. C., P. & S., class of 1905; aged 54; died, December 4, 1935, of acute dilatation of the heart.

Fowlkes, Francis V., Richmond, Va.; class of 1887; aged 68; died, January 20, 1936, of apoplexy.

Hodges, John Walter, Miami, Fla.; B. M. C., class of 1892; aged 78; died, November 27, 1935, of nephritis.

Howland, Charles A., Schenectady, N. Y.; B. M. C., class of 1908; served during the World War; aged 58; died, December 28, 1935, of angina pectoris. Dr. Howland was born at East Worcester, Otsego county, February 25, 1877, the son of Philander and Almena Duval Howland. He attended schools in North Adams, Mass., and then went to Drury Academy. Later he attended Clinton Liberal Institute at Fort Plain for a year. He entered Colgate University in 1897, and after a year volunteered to go to Santiago, Cuba, to nurse yellow fever patients among the American soldiers. He started at once but was shifted to Southern camps and before long illness sent him North again. He was graduated from Colgate in 1901, after which he went to the Philippine Islands for two years as a teacher. On his return he began studies in medicine at Baltimore Medical College, and for three years he was assistant in pathology and bacteriology at Maryland General Hospital. He was graduated cum laude. Dr. Howland then took a contract position in the North Carolina mountains, and in 1908 was married to Miss Lindenkohl of Washington, who returned with him to the mountains. In the fall of that year he passed the Massachusetts State Board examinations and began practice in Fall River. Later he took post-graduate work in Boston in preparation for specilization in internal medicine. In 1916, he left Fall River and entered the Peter Bent Brigham Hospital in Boston to work under Dr. Henry A. Christian. In 1917, he moved to Schenectady. When the United States entered the World war he volunteered and was commissioned a captain in the medical corps. In France, he was with the 37th Division as surgeon, First Battallion, 146th Infantry. He served through all engagements up to 14 days before the armistice, when he was sent to a hospital. In recent years, Dr. Howland had been known as the leader of the "dry" element in Schenectady. In 1928 he organized the Law Enforcement League here, which attained a membership of more than 3,000. He also was president of the Allied Citizens, a semi-political organization and part of the New York State Anti-Saloon League. For several years he was president of the Methodist Social Union. He worked with many of the ministers in this city and had delivered many addresses in churches here. Besides his wife, Mrs. Helen Cotton Howland, Dr. Howland leaves three daughters. His first wife, Mrs. Elsa Lindenkohl Howland, died in August, 1933.

Hughes, Charles W., Pittsburgh, Pa.; P. & S., class of 1887; aged 74; died, February 11, 1934.

Iglehart, Nathan Edmondson Berry, Baltimore, Md.; class of 1889; aged 68; died, February 1, 1936.

Johnson, Harry O., Machias, Me.; B. M. C., class of 1903; county medical examiner; aged 61; died, February 18, 1936, of cardiac disease. Dr. Johnson practised in Machias for thirty years. He attended Yale University prior to taking up the study of medicine in Baltimore. A wife, daughter and three sons survive him.

Judd, Edward Starr, Rochester, Minn.; Sc.D., University of Maryland (1934); president of the American Medical Association in 1931–1932; died of pneumonia, November 29, 1935. Born at Rochester, Minn., July 11, 1878, Dr. Judd graduated from the University of Minnesota School of Medicine, Minneapolis, in 1902. In 1903, Dr. Judd became first assistant to Dr. C. H. Mayo and in 1904 he was appointed head of a section in the division of surgery at the Mayo Clinic. Later he was appointed surgeon at St. Mary's Hospital and professor of surgery in the graduate school of the University of Minnesota, a position which he filled with distinction. He contributed much to the advancement of surgery. He was an indefatigable worker. He was a member of the American, Southern, and Western Surgical Associations, the American College of Surgeons, the Clinical Surgical Association, etc. Like all great physicians, he was modest, sincere and earnest.

Kirkpatrick, Thomas S., Fort Mill, S. C.; class of 1884; formerly mayor and bank president; aged 75; died, November 10, 1935, of cardiac disease.

MacMillan, William Dougal, Vista, N. C.; class of 1869, Confederate veteran; aged 91; died, November 12, 1935, of arteriosclerosis and angina pectoris. Dr. MacMillan was born on the family plantation at Sloop Point, Pender county, in 1844. On the outbreak of the War between the States, he was a pupil at Schook Academy in Madison, N. C. Though only seventeen years of age, he joined the Confederate army. He was a member of the 51st North Carolina Infantry, Clingman's Brigade, Hoke's Division and participated with these organizations in the battle of the Crater and the fighting around Richmond. He was severely wounded at Fort Harrison and again at Cold Harbor.

After the war he graduated in medicine at the University of Maryland and for several years practised in Onslow and Duplin counties and was divisional physician for the Atlantic Coast line.

On returning to Wilmington he became superintendent of the consolidated city and county health department, in which position he gained wide recognition as an expert diagnostician of yellow fever, typhus and small pox. In 1869, he married Margaret Anderson of Fayetteville, N. C., who died in 1923. The Wilmington Morning Star, November 14, 1935, carried the following editorial notice of Dr. MacMillan's death:

> Death, the greatest bugler of them all, is rapidly sounding taps for the fast diminishing remnants of the gray army, and twice within a month he has summoned one of Wilmington's most distinguished remaining veterans to the final rendezvous where:
>
> *On Fame's eternal camping grounds*
> *Their silent tents are spread;*
> *And Glory guards with solemn round*
> *The bivouac of the dead*
>
> The latest call hails to the last retreat Dr. W. D. MacMillan, soldier, scientist and citizen, who at the ripe age of ninety-one lays down the burden of life after decades spent in the service of his country and of mankind.
>
> As a youthful soldier, the doctor faced the hell of steel that enveloped Cold Harbor and Petersburg; absorbed some of it, and came back to give his community the benefits of his medical knowledge. Much of man's modern weapon over ways and means of combatting yellow fever came from the researches of this Wilmington physician, who devoted a lifetime to the service of country and humanity.
>
> An estimable gentleman of the old school, a typical product of the Cape Fear region, Dr. MacMillan was known and admired by hundreds. He dies leaving behind him the heritage of knowledge that comes with a mundane task well-done.

Maguire, C. Frank, Upper Marlboro, Md.; class of 1883; aged 74; died, November 24, 1935, of intestinal obstruction.

McDuffie, James Henry, Columbus, Ga.; class of 1887; past president of the Muscogee County Medical Society and the Chattahoochee Valley Medical Society; formerly vice-president and for many years member of the state board of health; aged 75; died, November 16, 1935, of lobar pneumonia.

McMillen, Robert M., Wheeling, W. Va.; P. & S., class of 1887; Bellevue Hospital Medical College, New York (1889); past president of the Ohio County Medical Society; aged 73; died, November 29, 1935, of cerebral edema.

Messick, William I., Baltimore, Md.; class of 1895; formerly associate professor of clinical medicine as his alma mater; aged 66; died, January 3, 1936, of pneumonia. Born at Bridgeville, Delaware, he received his elementary education in the public schools of that State.

Noble, Charles Percy, Radnor, Pa.; class of 1884; formerly professor of clinical gynecology, Woman's Medical College of Pennsylvania, Philadelphia; co-editor with Howard A. Kelly and one of the authors of the "Kelly-Noble Gynecology and Abdominal Surgery" in two volumes; corresponding member of the Gynaekologische Gesellschaft in Muenchen; aged 72; died, November 21, 1935.

O'Connor, James Bernard, Lowell, Mass.; P. & S., class of 1892; formerly member of the local school committee; aged 67; died, December 22, 1935, of prostatic hypertrophy and diverticulitis.

Pack, Henry B., Blacksburg, Va.; P. & S., class of 1905; aged 57; died, December 2, 1935, of coronary thrombosis.

Parker, Amos E., Baltimore, Md.; class of 1872; aged 86; died, September 19, 1935, of bronchopneumonia.

Parker, Walter Henry, Brewster, Mass.; B. M. C., class of 1896; aged 63; died, October 12, 1935, of coronary thrombosis.

Parrish, William P., Chatham, Va.; B. M. C., class of 1891; formerly mayor of Chatham; aged 69; died, December 6, 1935, of arteriosclerosis and hypertension.

Probasco, Luther Green, Whitesville, N. Y.; B. M. C., class of 1898; aged 63; died, December 24, 1935, of chronic myocarditis.

Pumpelly, William Collins, Fort Pierce, Fla.; P. & S., class of 1903; veteran of the Spanish-American and World Wars; at one time professor of pharmacology, chemistry and botany, College of Pharmacy, Mercer University, Macon, Ga.; aged 58; died, September 18, 1935.

Rains, Charles Marion, Bohannon, Va.; P. & S., class of 1877; aged 77; died, October 28, 1935.

Raphel, Eugene Florencio, Cumberland, Md.; class of 1906; aged 57; died, October 30, 1935, of cirrhosis of the liver.

Reeks, Thomas Eben, New Britain, Conn.; class of 1901; at one time director of the bureau of preventable diseases, State of Connecticut Department of Health, and deputy commissioner of health; past president of the Connecticut Public Health Association and and the Connecticut Hospital Association; formerly health officer of New Britain; medical superintendent of the New Britain General Hospital; aged 56; died, November 13, 1935, of adenocarcinoma of the stomach.

Reik, Andrew John Neilson, Pelham Manor, N. Y.; class of 1900; served during the World War as a lieutenant-colonel in the U. S.

Army with distinction; aged 64; died, February 24, 1936. Dr. Reik was born in Baltimore. After graduating he studied in Vienna, Berlin, Paris and London. Upon his return to the United States, he located in Baltimore and limited his practice to the diseases of the eye, ear, nose and throat. A year ago he moved to Pelham Manor. Dr. Henry Ottridge Reik, class of 1891, of New York City, is a brother.

Roberts, Frederick Alpha, Pittsfield, Mass.; P. & S., class of 1897; aged 72; died, November 30, 1935, of angina pectoris.

Ross, Theophilus Erskine, Hattiesburg, Miss.; P. & S., class of 1888; member of the House of Delegates of the American Medical Association; past president of the Mississippi State Medical Association; fellow of the American College of Surgeons; aged 71; died, September 29, 1935.

Ryan, Edward J., St. Johns, N. B.; P. & S., class of 1908; formerly assistant in pathology, University and Bellevue Hospital Medical College, N. Y.; served during the World War; aged 52; died, November 26, 1935.

Shankle, Henry DeWitt, Washington, Court House, Ohio; P. & S., class of 1889; served during the World War; formerly connected with the Veterans Administration Facility; aged 68; died, September 26, 1935.

Souter, William Norwood, Portsmouth, N. H.; class of 1886; member of the New England Ophthalmological Society; formerly instructor in ophthalmology, Harvard University Medical School; served during the World War; aged 74; died, November 24, 1935, of carcinoma of the stomach, liver and peritoneum.

Spoon, Arthur Ogburn, Greensboro, N. C., class of 1908; aged 54; died, December 10, 1935, of influenza and pneumonia.

Sprowls, Guy M., Imperial, Pa.; P. & S., class of 1912; aged 48; died, October 29, 1934, of pneumonia.

Stem, Grover A. C., Baltimore, Md.; class of 1912; aged 47; died, February 5, 1936, of pneumonia. In 1915 Dr. Stem joined the American Red Cross and saw 18 months' service in German Field Hospitals and in Russian prison camps. He served after graduation as an interne at the University of Maryland Hospital.

Stone, Isaac S., Washington, D. C.; class of 1872; aged 84; died December 22, 1935, of cerebral thrombosis. Dr. Stone formerly was professor of gynecology at Georgetown University and on his retirement in 1921 was named professor emeritus. He was born at Sandy Spring, Md., March 1, 1851. He practised medicine for several years at Lincoln, Loudon County, Va., before moving to Washington. He was a fellow of the Royal Society of Medicine, London and of the American College of Surgeons. He was a founder and past president of the Southern Surgical Association. He contributed many articles on surgical and gynecological topics to the current literature. Georgetown University awarded him the honorary degree of LL.D.

Sutton, Laurence Frederick Vincent, Mazeppa, Minn.; P. & S., class of 1906; aged 56; died, December 4, 1935, of cardiac disease.

Walker, Edward Y., Eatonton, Ga.; P. & S., class of 1881; aged 78; died, November 5, 1935, of arteriosclerosis and hemiplegia.

Wilkins, George Lawson, Baltimore, Md.; class of 1870; aged 84; died, December 14, 1935, of bronchopneumonia.

SPRING ACTIVITIES

The Board of Regents, The President and the Board of Directors of the Alumni Association together with the Dean and Medical Council of the Medical School of the University of Maryland, cordially invite you to attend these activities.

PROGRAM

JUNE 4TH, 1936

9:00 A.M. Registration at the Main University Building.

10:00 A.M.–12:00 Noon—Demonstrations of Peripheral Arterial Diseases. Dr. Arthur M. Shipley.
Demonstration in Cancer. Dr. J. M. Hundley, Jr.
Demonstration and Moving Picture in Laryngeal Diseases. Dr. Edward A. Looper.
Demonstration in Physiotherapy. Dr. Allen Voshell.
Demonstration in X-ray Department. Dr. Henry J. Walton.

1:00 P.M.—Luncheon

2:00 P.M.—Annual meeting of the Medical Alumni Association, 7th Floor, University Hospital.

3:00 P.M.—Addresses on Medicine and Surgery by prominent speakers.

4:00–7:00 P.M.—Intermission.

7:00 P.M.—Annual Banquet, Southern Hotel.

GUESTS OF HONOR

H. C. BYRD
President of the University of Maryland

HIS EXCELLENCY, THE HONORABLE HARRY W. NICE
Governor of Maryland

THE HONORABLE HOWARD W. JACKSON
Mayor of Baltimore

MEMBERS OF THE BOARD OF REGENTS

RANDOLPH WINSLOW, M.D., LL.D.
Emeritus Professor of Surgery, University of Maryland

GRADUATES OF THE 1936, SCHOOL OF MEDICINE, UNIVERSITY OF MARYLAND

The following classes have expressed their intention to hold a reunion this year:

Class of 1921—Dr. Jas. H. Wilkerson, The Latrobe Apts., Baltimore, Md.

Class of 1911—P & S.—Dr. John F. Hogan, 7 E. Preston St., Baltimore, Md.

B. M. C.—Dr. Wm. H. Triplett, 1326 W. Lombard St., Baltimore, Md.

Class of 1906—P & S—Dr. Walter D. Wise, 1120 St. Paul St., Baltimore, Md.

NOTE: The reunions will include the graduates from the College of Physicians and Surgeons, University of Maryland and the Baltimore Medical College. Any other classes desiring to hold a reunion will please get in touch with the Medical Alumni office, Lombard and Greene Streets, Baltimore, Maryland, and we shall be pleased to help in every possible way to make the affair a success.

JUNE, 6TH, 1936

11:00 A.M.—Commencement Exercises, Ritchie Colosseum, College Park, Md.

- -

Secretary of the Medical Alumni Association:

Kindly send ...... ticket .. for the Alumni banquet of the Medical Alumni Association, University of Maryland, to be held at the Southern Hotel, on Thursday evening, June 4th, 1936, at 7 P.M.

will
I *or* be present for the Luncheon.
will not

Enclosed please find subscription at $3.50 per ticket.

Name...

Address..

(*Detach and mail to:* MEDICAL ALUMNI ASSOCIATION
Lombard & Greene Streets, Baltimore, Md.)

Programs may be obtained at the time of registration.

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BULLETIN

OF THE

University of Maryland School of Medicine *and* College of Physicians and Surgeons

Successor to The Hospital Bulletin of the University of Maryland,
Baltimore Medical College News, and the Journal of the
Alumni Association of the College of
Physicians and Surgeons

Annual Announcement
Session 1936-37

VOLUME 20, NO. 5
MAY, 1936

CALENDAR FOR 1936–37

SCHOOL OF MEDICINE

FIRST SEMESTER

1936		
September 22	Tuesday	*Registration for first- and second-year students.
September 23	Wednesday	*Registration for all other students.
September 24	Thursday	Instruction begins with the first scheduled period.
November 25	Wednesday	Thanksgiving recess begins after the last scheduled period.
November 30	Monday	Instruction resumed with the first scheduled period.
December 19	Saturday	Christmas recess begins after the last scheduled period.
1937		
January 4	Monday	Instruction resumed with the first scheduled period.
January 25 to January 30, incl.	Monday to Saturday	*Registration for the second semester.
January 30	Saturday	First semester ends after the last scheduled period.

SECOND SEMESTER

February 1	Monday	Instruction begins with the first scheduled period.
February 22	Monday	Washington's Birthday. Holiday.
March 24	Wednesday	Easter recess begins after the last scheduled period.
March 31	Wednesday	Instruction resumed with the first scheduled period.
June 5	Saturday	Commencement.

* A student who neglects or fails to register prior to or within the day or days specified for his or her school will be called upon to pay a fine of five dollars ($5.00). The last day of registration with fine added to regular fees is Saturday at noon of the week in which instruction begins following the specified registration period. (This rule may be waived only upon the written recommendation of the dean.)

The offices of the registrar and comptroller are open daily, not including Saturday, from 9:00 a.m. to 5:00 p.m., and on Saturday from 9:00 a.m. to 12:30 p.m., with the following exceptions: Monday, September 14, 1936, until 8:00 p.m.: Saturday, September 26, 1936, until 5:00 p.m.; and on Saturday, January 30, 1937, until 5:00 p.m.

Advance registration is encouraged.

ORGANIZATION

THE UNIVERSITY OF MARYLAND

HARRY CLIFTON BYRD, B.S., LL.D., *President and Executive Officer*

BOARD OF REGENTS

	Term expires
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MRS. JOHN L. WHITEHURST, *Secretary* 3902 St. Paul Street, Baltimore	1938
HON. W. CALVIN CHESNUT United States Postoffice Building, Baltimore	1942
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HENRY HOLZAPFEL, JR., ESQ Hagerstown, Washington County	1943
HARRY H. NUTTLE, ESQ Denton, Caroline County	1941
J. MILTON PATTERSON, ESQ Cumberland, Alleghany County	1944
JOHN E. RAINE, ESQ Towson, Baltimore County	1939
CLINTON L. RIGGS, ESQ 903 N. Charles Street, Baltimore	1942

Control of the University of Maryland is vested in a Board of nine Regents, appointed by the Governor and confirmed by the Senate for terms of nine years each. The general administration of the University is vested in the President. The University Council is an advisory body, composed of the President, the Vice-President, the Director of the Agricultural Experiment Station, the Director of the Extension Service, and the Deans. The University Council acts upon all matters having relation to the University as a whole or to cooperative work between the constituent groups. Each school has its own Faculty Council, composed of the Dean and members of its Faculty; each Faculty Council controls the internal affairs of the group it represents.

The University has the following educational organization:

The College of Agriculture,
The College of Engineering,
The College of Arts and Sciences,
The School of Medicine,
The School of Law,
The School of Dentistry,
The School of Pharmacy,
The College of Education,
The College of Home Economics,
The Graduate School,
The Summer School,
The Department of Physical Education and Recreation.

The Schools of Medicine, Law, Dentistry and Pharmacy are located in Baltimore; the others in College Park, Maryland.

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(Baltimore Schools)

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Roger Howell, Ph.D., LL.B	Dean of the School of Law
Andrew G. DuMez, M.S., Ph.D	Dean of the School of Pharmacy
J. Ben Robinson, D.D.S., F.A.C.D	Dean of the School of Dentistry
T. H. Taliaferro, C.E., Ph.D	Dean of the College of Arts and Sciences
Arthur J. Lomas, M.D., C.M., D.P.H	Superintendent of the Hospital
T. O. Heatwole, M.D., D.D.S., D.Sc	Secretary of the Baltimore Schools
W. M. Hillegeist	Director of Admissions

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Walter D. Wise, M.D.
Magnus I. Gregersen, M.A., Ph.D.
J. Mason Hundley, Jr., M.A., M.D.

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J. Frank Crouch, M.D.	Professor Emeritus of Clinical Ophthalmology and Otology
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Harry Friedenwald, A.B., M.D	Professor Emeritus of Ophthalmology
William S. Gardner, M.D	Professor Emeritus of Gynecology
Julius Friedenwald, A.M., M.D	Professor Emeritus of Gastro-Enterology

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Arthur M. Shipley, M.D., Sc.D., Professor of Surgery.
J. M. H. Rowland, M.D., Sc.D., LL.D. Professor of Obstetrics and Dean of the Faculty.
Alexius McGlannan, A.M., M.D., LL.D., Professor of Surgery.
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M. G. Tull, M.D., Instructor in Hygiene and Public Health.
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Thomas S. Bowyer, M.D., Instructor in Gynecology.
Joseph V. Castagna, M.D., Instructor in Gynecology.
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Howard B. McElwain, M.D., Assistant in Surgery.
Robert W. Johnson, M.D., Assistant in Pathology and Surgery.
A. V. Buchness, M.D., Assistant in Surgery.
T. J. Touhey, M.D., Assistant in Surgery.
Nathaniel Beck, M.D., Assistant in Medicine.
Carl Benson, M.D., Assistant in Medicine.
A. Scagnetti, M.D., Assistant in Medicine.
W. J. Schmitz, M.D., Assistant in Pediatrics.
H. Edmund Levin, M.D., Assistant in Bacteriology and Medicine.
John G. Runkle, M.D., Assistant in Ophthalmology.
Margaret B. Ballard, M.D., Assistant in Obstetrics.
Birkhead Macgowan, M.D., Assistant in Diseases of the Nose and Throat and Otology.
Clyde F. Karns, M.D., Assistant in Surgery.
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E. M. Reese, M.S., Assistant in Medicine.
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C. W. Peake, M.D., Assistant in Surgery.
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J. W. Nelson, M.D., Assistant in Surgery.
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I. Ridgeway Trimble, M.D., Assistant in Surgery.
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Albert J. Shochat, M.D., Assistant in Gastro-Enterology.
O. Walter Spurrier, M.D., Assistant in Pediatrics.
Gustav Highstein, M.D., Assistant in Pediatrics.
S. C. Feldman, M.D., Assistant in Pediatrics.
Nelsa Lee Wade, M.D., Assistant in Pediatrics.
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Richard France, M.D., Assistant in Medicine.

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Beverley C. Compton, A.B., M.D., Assistant in Gynecology.
John C. Dumler, B.S., M.D., Assistant in Gynecology and Oncology.
Jerome Snyder, M.D., Assistant in Ophthalmology.
I. H. Maseritz, M.D., Assistant in Orthopaedic Surgery.
John V. Hopkins, M.D., Assistant in Orthopaedic Surgery.
J. G. Benesuns, M.D., Assistant in Orthopaedic Surgery.
E. L. Mortimer, Jr., Assistant in Orthopaedic Surgery.
James R. Gibbons, M.D., Assistant in Diseases of the Nose and Throat.
Joseph Nurkin, M.D., Assistant in Diseases of the Nose and Throat.
Samuel H. Bryant, D.D.S., Assistant in Exodontia.
Harold Goldstein, D.D.S., Assistant in Exodontia.
Eldred Roberts, M.D., Assistant in Oncology.

HISTORY OF THE SCHOOL OF MEDICINE

The present School of Medicine, with the title of the University of Maryland School of Medicine and College of Physicians and Surgeons, is the result of a consolidation and merger of the University of Maryland School of Medicine with the Baltimore Medical College (1913) and the College of Physicians and Surgeons (1915).

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was organized in 1807, and chartered in 1808, under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties: Divinity, Law, and Arts and Sciences; and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

The beautiful college building at Lombard and Greene Streets, erected in 1812, is the oldest structure in America devoted to medical teaching. Here was founded one of the first medical libraries and the first medical college library in the United States.

Here for the first time in America dissecting was made a compulsory part of the curriculum; here instruction in Dentistry was first given (1837) and here were first installed independent chairs for the teaching of Diseases of Women and Children (1867), and of Eye and Ear Diseases (1873).

The School of Medicine was one of the first to provide for adequate clinical instruction by the erection in 1823 of its own hospital, and in this hospital intramural residency for the senior student was first established.

In 1913, juncture was brought about with the Baltimore Medical College, an institution of thirty-two years' growth. By this association the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated in 1872, and established on Hanover Street in a building afterward known as the *Maternite*, the first obstetrical hospital in Maryland. In 1878 union was effected with the Washington University School of Medicine, in existence since 1827, and the college was removed to Calvert and Saratoga Streets. By the consolidation with the College of Physicians and Surgeons, medical control of the teaching beds in the City Hospital, now the Mercy Hospital, was obtained.

ORGANIZATION OF THE SCHOOL OF MEDICINE

LABORATORY FACILITIES

The laboratories are located at two centers, the group of buildings at Greene and Lombard Streets, and at 32 and 34 South Paca Street. The schedule is so adjusted that the laboratory periods are placed with a view of obviating unnecessary movement on the part of the classes. The building known as Gray Laboratory, at Greene and Lombard Streets, houses three departments. The Anatomical Laboratory is placed upon the top floor, where skylights and an auxiliary modern system of electric lighting give adequate illumination of the subjects. The Department of Pharmacology occupies the second floor. There is a large room for the general student laboratory, which is thoroughly equipped with apparatus of recent acquisition, and in addition contains many instruments of unique and original design. With office and stockroom adjoining, this laboratory is complete for student experimentation. On the first floor of Gray Laboratory is the Department of Physiology. In addition to the large student laboratory, which is constructed for groups of fifty-eight students, there are rooms for the departmental office, preparation of material, and storage of apparatus. An additional room is devoted exclusively to mammalian experiments. In this building there is maintained an animal room in which is kept an abundance of material for experimental purposes. The embalming and storage plant for the Department of Anatomy is in physical connection with the building and its special departments. The laboratories of physiology and pharmacology are completely equipped with apparatus and lockers in accord with the best ideas of instruction. The students work in groups of two each, and each group has sufficient apparatus, so that the experimental work can be carried on without delay or recourse to a general stockroom.

The laboratories of Pathology, Bacteriology, Biochemistry and Clinical Pathology are located in the Medical laboratory building on Greene Street north of Lombard.

The Departments of Pathology, Bacteriology and Clinical Pathology use, conjointly, the large modernly equipped student laboratory on the second floor. The capacity is one hundred students. On the second floor there are also students' preparation rooms for the making and sterilization of media, cold storage and incubating rooms and research laboratories for the Departments of Bacteriology and Clinical Pathology.

On the main floor of this building are the offices, library, research and technical rooms of the Departments of Pathology and Bacteriology. The Department of Art also occupies quarters on this floor. The basement is given over to teaching museums, store rooms, students' locker room and lavatories.

The Department of Biological Chemistry is housed on the top floor of this building. The space allotted to teaching includes a large student laboratory equipped with one hundred and thirty-two commodious locker units. It is supplied with gas, hot and cold water, vacuum and direct current service, a special apparatus room, a warm room, a colorimeter room, a balance room, a first-aid room and a stockroom. These rooms have modern laboratory furniture and apparatus, a constant temperature and ventilating system, and are equipped and arranged for economic use of the students' time.

Adjoining the students' space are private offices and laboratories of the staff, a departmental library, a shop and a preparation room.

In the Main Building is the Museum of Anatomy, where are arranged for student reference, specimens which represent the careful selection of material over a period of many years. In the University Hospital is the Student Laboratory for analytical studies by those students who are serving as clinical clerks on the wards. A similar laboratory is maintained in the building at the northwest corner of Saratoga and Calvert Streets, for the student work of the Mercy Hospital.

At 32 and 34 South Paca Street are the Laboratories of Histology and Embryology. These laboratories accommodate the full class, and are equipped with necessary lockers for microscopes and apparatus. The department housed in this building is provided with individual offices, preparation and stockrooms.

CLINICAL FACILITIES

UNIVERSITY HOSPITAL

The University Hospital, which is the property of the University of Maryland, is the oldest institution for the care of the sick in the State of Maryland. It was opened in September, 1823, under the name of the Baltimore Infirmary, and at that time consisted of but four wards, one of which was reserved for eye patients.

In 1933–1934 the new University Hospital was erected, and patients were admitted to this building in November 1934. The new hospital is situated at the southwest corner of Redwood and Greene Streets, and is consequently opposite the Medical School buildings. The students, therefore, are in close proximity and little time is lost in passing from the lecture halls and laboratories to the clinical facilities of the new building.

The new hospital has a capacity of practically four hundred beds devoted to general medicine, surgery, obstetrics, pediatrics, and the various medical and surgical specialties. On the second, seventh and eighth floors are centered practically all the clinical and laboratory teaching facilities of the institution. The north wing of the second floor is occupied by the entire Department of Roentgenology. The east wing houses clinical pathology and special laboratories for clinical microscopy, bio-chemistry, bacteriology, and an especially well appointed laboratory for students' training. The south wing has its electro-cardiographic and basal metabolism departments, with new and very attractive air-conditioned or oxygen therapy cubicles. The west wing contains the Department of Rhinolaryngology and Bronchoscopy, Industrial Surgery, Ophthalmology, and Male and Female Cystoscopy.

The teaching zone extends from this floor to the eighth floor and comprises wards for surgery, medicine, obstetrics, pediatrics, and a large clinical lecture hall.

On the seventh floor is the general operating suite, the delivery suite, and the central supply station. The eighth floor is practically a students' floor and affords a mezzanine over the operating and delivery suites, and a students' entrance to the clinical lecture hall.

There are practically 270 beds available for teaching. In the basement there is a very well appointed Pathological Department with a large teaching autopsy room and its adjunct service of instruction of students in pathological anatomy.

Owing to its situation, adjacent to the largest manufacturing district of the city and the shipping district, a large number of accident patients are received.

The obstetrical service is particularly well arranged and provides accommodation for forty ward patients. This service, combined with an extensive home service, assures the student of abundant obstetrical training.

During the year ending December 31, 1935, 859 cases were delivered in the hospital and 749 cases in the outdoor department. Students in the graduating class delivered or observed an average of fourteen cases, each student being required to deliver ten cases in the Outdoor Department or in allied hospitals.

The dispensaries associated with the University Hospital and the Mercy Hospital are organized upon a uniform plan in order that the teaching may be the same in each. Each dispensary has the following departments: Medicine, Surgery, Obstetrics, Pediatrics, Eye and Ear, Genito-Urinary, Gynecology, Gastro-Enterology, Neurology, Orthopaedics, Proctology, Dermatology, Throat and Nose, Tuberculosis and Psychiatry.

All students in their junior year work each day in the Departments of Medicine and Surgery of the dispensaries. In their senior year, all students work one hour each day in the special departments.

The new building, with its modern planning, makes a particularly attractive teaching hospital and is a very valuable addition to the clinical facilities of the Medical School.

The old hospital building has been remodeled and is occupied by the Out-patient Department. Thus the students of the future have been provided with a splendidly appointed group of clinics for their training in out-patient work. All departments of clinical training are represented in this remodeled building and all changes have been predicated on the teaching function for which this department is intended.

HOSPITAL COUNCIL

Harry Clifton Byrd, B.S., LL.D., *President.*
W. W. Skinner, Esq., *Chairman of the Board of Regents.*
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M. C. Pincoffs, B.S., M.D., *Head of the Department of Medicine.*
A. M. Shipley, M.D., Sc.D., *Head of the Department of Surgery.*
A. J. Lomas, M.D., C.M., D.P.H., *Superintendent of the Hospital.*
Miss Annie Crighton, R.N., *Superintendent of Nurses.*
Miss Florence Sadtler, *Representing Woman's Auxiliary Board.*
Mrs. John L. Whitehurst.
John E. Raine, Esq.

Ralph P. Truitt, M.D.
Henry J. Walton, M.D. } *Representing Hospital Staff*

George F. Sargent, M.D.
Kenneth Jones, M.D. } *Representing Medical Alumni*

UNIVERSITY HOSPITAL STAFF

A. J. Lomas, M.D., C.M., D.P.H., *Superintendent of the Hospital*

Physicians

Maurice C. Pincoffs, B.S., M.D.

Harry M. Stein, M.D.
Walter A. Baetjer, M.D.
Thomas R. Sprunt, M.D.
L. A. M. Krause, M.D.
G. Carroll Lockard, M.D.
Joseph E. Gichner, M.D.
William H. Smith, M.D.
William S. Love, Jr., M.D.

Gastro-Enterologist

Theodore H. Morrison, M.D.

Neurologists

Irving J. Spear, M.D.

George M. Settle, M.D.
Leon Freedom, M.D.

Psychiatrists

Ross McC. Chapman, M.D.

Ralph P. Truitt, M.D.
Harry M. Murdock, M.D.

Pediatricians

C. Loring Joslin, M.D.
Albert Jaffe, M.D.

Pathologists

Hugh R. Spencer, M.D.
S. Lloyd Johnson, M.D.

Surgeons

Randolph Winslow, A.M., M.D., LL.D.
Nathan Winslow, M.D.
Charles Reid Edwards, M.D.
Arthur M. Shipley, M.D., Sc.D.
Page Edmunds, M.D.
Frank S. Lynn, M.D.

Laryngologists

Edward A. Looper, M.D.
Franklin B. Anderson, M.D.

Proctologists

J. Dawson Reeder, M.D.
Monte Edwards, M.D.

Orthopaedic Surgeons

Allen Fiske Voshell, A.B., M.D.
Compton Riely, M.D.
Moses Gellman, B.S., M.D.

Genito-Urinary Surgeons

W. H. Toulson, A.B., M.Sc., M.D.
Lyle J. Millan, M.D.

Roentgenologists

Henry J. Walton, M.D.
Eugene L. Flippin, M.D.

Dermatologist

Harry M. Robinson, M.D.

Bronchoscopist

Edward A. Looper, M.D., D.Oph.

Anaesthetists

S. Griffith Davis, M.S., M.D.
E. Hollister Davis, A.B., M.D.
Melvin B. Davis, B.S., M.D.
Mary J. O'Brien, R.N.

Obstetricians

J. M. H. Rowland, M.D., Sc.D., LL.D.
M. A. Novey, A.B., M.D.
Isadore A. Siegel, A.B., M.D.
L. H. Douglass, M.D.
J. G. M. Reese, M.D.
E. P. H. Harrison, Jr., A.B., M.D.

Ophthalmologists

Clyde A. Clapp, M.D.
William Tarun, M.D.

Otologist

J. W. Downey, Jr., M.D.

Gynecologists

W. S. Gardner, M.D.
J. M. Hundley, Jr., M.A., M.D.
R. G. Willse, M.D.
Leo Brady, M.D.

Oncologists

J. M. Hundley, Jr., M.A., M.D.
Grant E. Ward, A.B., M.D.

UNIVERSITY HOSPITAL RESIDENT AND INTERNE STAFF
1936–1937

RESIDENT STAFF

Coleman Carnegie Johnston, M.D., *Resident in Surgery.*
Thurston Ray Adams, M.D., *Assistant Resident in Surgery.*
John McCullen Warren, A.B., M.D., *Assistant Resident in Surgery.*
Joseph H. Holmes, A.B., M.D., *Resident in Medicine.*
Harry M. Robinson, Jr., M.D., *Assistant Resident in Medicine.*
Hugh Bernard McNally, M.D., *Resident in Obstetrics.*
Charles Luther Goodhand, A.B., M.D., *Assistant Resident in Obstetrics.*
Charles K. Fetterhoff, M.D., *Assistant Resident in Obstetrics.*
Lewis B. Whiting, M.D., *Assistant Resident in Gynecology.*
Clarence Conway Briscoe, M.D., *Assistant Resident in Gynecology.*
William Lawrence Howard, B.S., M.D., *Resident in Nose and Throat.*
Emanuel de Lalla, M.D., *Resident in Roentgenology.*
Thomas A. Christensen, M.D., *Resident in Pediatrics.*
Israel Rosen, M.D., *Assistant Resident in Pediatrics.*

SENIOR INTERNS

John Warren Albrittain, B.S., M.D.
James Pettigrew Bunn, Jr., B.S., M.D.
Ernest Ivon Cornbrooks, Jr., A.B., M.D.
Edward Francis Cotter, M.D
Francis George Dickey, A.B., M.D.
Walter Henry Gerwig, Jr., M.D.
John Randolph Godbey, M.D.
John Carl Hamrick, B.S., M.D.
Wm. Goldsborough Helfrich, B.S., M.D.
Howard Brooks Mays, M.D.
George Frederick Schmitt, Jr., M.D.
Paul Schonfeld, M.D.

JUNIOR INTERNS

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Harry Clay Bowie, B.S., M.D.
Nachman Davidson, A.B., M.D.
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Walter Esselman Karfgin, B.S., M.D.
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Gibson Jackson Wells, A.B., M.D.
Norman James Wilson, B.S., M.D.
Vernon D. Kaufman, D.D.S. (Dental)

UNIVERSITY HOSPITAL DISPENSARY STAFF

Merrell L. Stout, A.B., M.D.
Assistant Superintendent
Dispensary Director

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C. Loring Joslin, M.D.
John E. Legge, M.D.
A. J. Lomas, M.D.
Ralph P. Truitt, M.D.

MEDICINE

John E. Legge, M.D., *Chief of Clinic*

Consultant Physicians

Wetherbee Fort, M.D.
Paul W. Clough, M.D.
L. A. M. Krause, M.D.
Lewis P. Gundry, M.D., *Assistant Chief of Clinic*
M. S. Shiling, M.D., *Assistant Chief of Clinic*
Harry G. Jones, M.D.
Robert W. Garis, M.D.
Grace G. Jones, M.D.
William H. Triplett, M.D.
George Silverstein, M.D.
Harry A. Rutledge, M.D.
S. Lilienfeld, M.D.
Carl P. Roetling, M.D.
M. A. Fine, M.D.

GASTRO-ENTEROLOGY

Samuel Morrison, M.D., *Chief of Clinic*

Beatrice Bamberger, M.D.
Z. V. Hooper, M.D.
M. S. Koppelman, M.D.
Ernest Levi, M.D.
Z. Morgan, M.D.
C. Victor Richards, M.D.
Albert J. Shochat, M.D.
Joseph Sindler, M.D.

NEUROLOGY

Leon Freedom, M.D., *Chief of Clinic*

Benjamin Pushkin, M.D.

PSYCHIATRY

Ralph P. Truitt, M.D., *Chief of Clinic*
H. W. Newell, M.D.
Harry Murdock, M.D.

DISEASES OF THE LUNGS

E. H. Tonolla, M.D., *Chief of Clinic*
H. V. Langeluttig, M.D.

DISEASES OF METABOLISM

Lewis P. Gundry, M.D., *Chief of Clinic*

CARDIOVASCULAR DISEASES

William S. Love, Jr., M.D., *Chief of Clinic*

H. C. Grant, M.D.
Richard France, M.D.
Samuel J. Hankin, M.D.
Conrad Acton, M.D.

ALLERGY CLINIC

H. M. Bubert, M.D., *Chief of Clinic*

Paul Carliner, M.D.
Herbert Goldstone, M.D.
Samuel Snyder, M.D.

PEDIATRICS

C. Loring Joslin, M.D., *Director*
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Clewell Howell, M.D., *Chief of Clinic*

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M. Paul Byerly, M.D.
A. H. Finkelstein, M.D.
William G. Geyer, M.D.
Samuel S. Glick, M.D.
R. M. Hening, M.D.
F. Strattner Orem, M.D.
Gustav Highstein, M.D.
Israel P. Meranski, M.D.
Robert B. Taylor, M.D.
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Nelsa Wade, M.D.
W. H. Wheaton, M.D.
S. C. Feldman, M.D.
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Albert Jaffe, M.D.
S. Lilienfeld, M.D.
H. W. Schiff, M.D.
T. W. Keown, M.D.
William J. Todd, M.D.
J. Edmund Bradley, M.D.

SURGERY

Charles Reid Edwards, M.D., *Chief of Clinic*

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Luther E. Little, M.D.
R. Walter Graham, Jr., M.D.
James C. Owings, M.D.
Samuel E. Proctor, M.D.
William N. McFaul, Jr., M.D.
W. R. Johnson, M.D.
J. H. Wilkerson, M.D.
A. R. Wilkerson, M.D.
A. G. Siwinski, M.D.
L. T. Chance, M.D.
Samuel McLanahan, Jr., M.D.

ORTHOPAEDIC SURGERY

Allen Fiske Voshell, M.D., *Chief of Clinic*

Moses Gellman, M.D.
I. H. Maseritz, M.D.
John V. Hopkins, M.D.
E. L. Mortimer, Jr., M.D.
J. G. Benesuns, M.D.
Henry F. Ullrich, M.D.

GENITO-URINARY

W. H. Toulson, M.D., *Chief of Clinic*

W. A. H. Councill, M.D.
L. J. Millan, M.D.
Harry S. Shelley, M.D.
John F. Hogan, M.D.

ROENTGENOLOGY

Henry J. Walton, M.D., *Chief of Clinic*
Eugene L. Flippin, M.D.

DERMATOLOGY

Harry M. Robinson, M.D., *Chief of Clinic*
Francis A. Ellis, M.D.
H. M. Goodman, M.D.
A. C. Monninger, M.D.
Robert B. Taylor, M.D.

NOSE AND THROAT

Franklin B. Anderson, M.D., *Chief of Clinic*
James R. Gibbons, M.D.
Birkhead Macgowan, M.D.
Thomas R. O'Rourk, M.D.
Benjamin S. Rich, M.D.
Joseph Nurkin, M.D.

COLON AND RECTUM

Monte Edwards, M.D., *Chief of Clinic*
James C. Owings, M.D.

GYNECOLOGY

J. Mason Hundley, Jr., M.A., M.D., *Chief of Clinic*
John T. Hibbitts, M.D.
Kenneth B. Boyd, M.D.
Thomas S. Bowyer, M.D.
Beverley C. Compton, M.D.
W. Allen Deckert, M.D.
Marius P. Johnson, M.D.
Joseph V. Castagna, M.D.
John C. Dumler, M.D.

FEMALE CYSTOSCOPY

J. Mason Hundley, Jr., M.D.
John T. Hibbitts, M.D.
W. Allen Deckert, M.D.
Beverley C. Compton, M.D.
John C. Dumler, M.D.

ORAL SURGERY

Brice M. Dorsey, D.D.S., *Chief of Clinic*
Harold Goldstein, D.D.S.
Samuel H. Bryant, D.D.S.
William E. Hahn, D.D.S.

OBSTETRICS

Louis H. Douglass, M.D., *Chief of Clinic*
J. M. Reese, M.D., *Assistant Chief of Clinic*
M. A. Novey, M.D., *Assistant Chief of Clinic*
I. A. Siegel, M.D., *Assistant Chief of Clinic*
M. B. Ballard, M.D.
M. L. Mazer, M.D.
J. Hulla, M.D.
M. P. Johnson, M.D.
D. P. Bowe, A.B., M.D.
S. K. Wallace, M.D.
W. Allen Deckert, M.D.
Kenneth B. Boyd, M.D.
John E. Savage, B.S., M.D.

ONCOLOGY

Gynecological Division

J. Mason Hundley, Jr., M.D.
Thomas S. Bowyer, M.D.
Beverley C. Compton, M.D.
John C. Dumler, B.S., M.D.

Surgical Division

Grant E. Ward, M.D.
Eldred Roberts, M.D.
E. E. Covington, M.D.
J. W. Nelson, M.D.
H. A. Miller, M.D.
H. H. Ashbury, M.D.

OPHTHALMOLOGY

H. F. Graff, M.D., *Chief of Clinic*

Thomas R. O'Rourk, M.D.
M. C. Lang, M.D.
J. G. Runkle, M.D.
Frank A. Holden, M.D.
Jerome Snyder, M.D.
Frank A. Pacienza, M.D.

OTOLOGY

J. W. Downey, M.D., *Chief of Clinic*

Franklin B. Anderson, M.D.
Thomas R. O'Rourk, M.D.
Birkhead Macgowan, M.D.
Frank A. Holden, M.D.
Benjamin S. Rich, M.D.
Joseph Nurkin, M.D.

OCCUPATIONAL THERAPY

Miss Sue P. Hurt, *Directress*

SOCIAL SERVICE

Miss Grace Pearson, *Directress*

UNIVERSITY HOSPITAL DISPENSARY

Report from October 1, 1934 to September 30, 1935

Departments	*New Cases*	*Old Cases*	*Total*
Dermatology	7,114	13,652	20,766
Surgery	2,435	9,548	11,983
Pediatrics	2,873	17,381	20,254
Orthopaedics	1,428	9,526	10,954
Obstetrics	1,502	7,074	8,576
Medicine	1,721	5,375	7,096
Eye	1,467	4,538	6,005
Gynecology	1,557	3,712	5,269
Protein	118	4,897	5,015
Genito-Urinary	417	2,812	3,229
Oral Surgery	1,293	1,921	3,214
Nose and Throat	1,172	1,686	2,858
Oncology	256	2,280	2,536
Gastro-Intestinal	390	2,043	2,433
Cardiology	403	1,937	2,340
Tuberculosis	312	1,396	1,708
Neurology	264	1,192	1,456
Ear	251	436	687
Proctology	184	442	626
Cystoscopy	92	393	485
Total	25,249	92,241	117,490

MERCY HOSPITAL

The Sisters of Mercy first assumed charge of the Hospital at the corner of Calvert and Saratoga Streets, then owned by the Washington University, in 1874. By the merger of 1878 the Hospital came under the control of the College of Physicians and Surgeons, but the Sisters continued their work of ministering to the patients.

In a very few years it became apparent that the City Hospital, as it was then called, was much too small to accommodate the rapidly growing demands upon it. However, it was not until 1888 that the Sisters of Mercy, with the assistance of the Faculty of the College of Physicians and Surgeons, were able to lay the cornerstone of the present Hospital. This building was completed and occupied late in 1889. Since then the growing demands for more space have compelled the erection of additions, until now there are accommodations for 275 patients.

In 1909 the name was changed from The Baltimore City Hospital to Mercy Hospital.

The clinical material in the free wards is under the exclusive control of the Faculty of the University of Maryland School of Medicine and College of Physicians and Surgeons.

The Hospital adjoins the College building, and all surgical patients from the public wards are operated upon in the College operating rooms. This union of the Hospital and College buildings greatly facilitates the clinical teaching.

Mercy Hospital is the hospital of the United Railways and Electric Company of Baltimore City, and receives patients from the Baltimore and Ohio Railroad Company and from the Pennsylvania Railroad Company and its branches.

MERCY HOSPITAL STAFF

BOARD OF GOVERNORS

Alexius McGlannan, A.M., M.D., LL.D., *Chairman*

Sister M. Placide
Sister M. Helen
Sister M. Hildegarde
Sister M. Vincent

Walter D. Wise, M.D.
Waitman F. Zinn, M.D.
Thomas K. Galvin, M.D.
Maurice C. Pincoffs, M.D.

Sister M. Cornelia

HOSPITAL STAFF

SURGICAL DIVISION

Consulting Surgeon

Alexius McGlannan, A.M., M.D., LL.D.

Surgeons

Walter D. Wise, M.D.

Charles F. Blake, M.D.
F. L. Jennings, M.D.
R. W. Locher, M.D.
Thomas R. Chambers, M.D.

Elliott H. Hutchins, M.D.
D. J. Pessagno, M.D.
A. M. Evans, M.D.
William F. Rienhoff, M.D.

N. Clyde Marvel, M.D.

Associate Surgeons

I. O. Ridgely, M.D.
J. W. Nelson, M.D.
H. B. McElwain, M.D.

H. F. Bongardt, M.D.
Thomas B. Aycock, M.D.
Charles W. Maxson, M.D.

Julius Leyko, M.D.

Assistant Surgeons

John A. O'Connor, M.D.
Julius Goodman, M.D.
E. E. Covington, M.D.
S. Demarco, Jr., M.D.
Simon Brager, M.D.

T. J. Touhey, M.D.
I. R. Trimble, M.D.
R. T. Shackelford, M.D.
William N. McFaul, M.D.
Raymond F. Helfrich, M.D.

Ophthalmologists and Otologists

Harry Friedenwald, A.B., M.D.

H. K. Fleck, M.D.

J. W. Downey, M.D.

Associates

J. I. Kemler, M.D.

F. A. Pacienza, M.D.

Consulting Rhinologists and Laryngologists

Raymond McKenzie, M.D.

George W. Mitchell, M.D.

Rhinologists and Laryngologists

Waitman F. Zinn, M.D.

Associates

F. A. Pacienza, M.D.
F. A. Kayser, M.D.

Birkhead MacGowan, M.D.
Benjamin S. Rich, M.D.

Bronchoscopist

Waitman F. Zinn, M.D.

Associate

F. A. Kayser, M.D.

Proctologist

Charles F. Blake, M.D.

Assistant

E. E. Covington, M.D.

Orthopaedic Surgeon

Albertus Cotton, M.D.

Associate

H. L. Rogers, M.D.

Urologist

Alexander J. Gillis, M D.

Associates

Kenneth D. Legge, M.D.
Leon K. Fargo, M.D.

Dentist

N. D. Fusco, D.D.S.

Assistant

J. J. Foley, D.D.S.

MEDICAL DIVISION

Physicians

Maurice C. Pincoffs, B.S., M.D.
C. B. Gamble, M.D.
C. C. W. Judd, M.D.
Harvey G. Beck, M.D.
H. K. Peters, M.D.
George McLean, M.D.

Associates

Hubert C. Knapp, M.D.
Bartus T. Baggott, M.D.
J. S. Eastland, M.D.
Wetherbee Fort, M.D.
L. A. M. Krause, M.D.
John E. Legge, M.D.
T. Nelson Carey, M.D.

Assistants

S. A. Tumminello, M.D.
Howard Burns, M.D.
Earl Chambers, M.D.
K. W. Golley, M.D.
J. M. Miller, M.D.

Gastro-Enterologist

Julius Friedenwald, A.M., M.D.

Associates

T. Frederick Leitz, M.D.
Theodore Morrison, M.D.

Assistants

Maurice Feldman, M.D.
Joseph Sindler, M.D.

Pediatricians

Edgar B. Friedenwald, M.D.

Associates

F. B. Smith, M.D.
Thomas J. Coonan, M.D.

Assistants

W. J. Schmitz, M.D.
G. B. Mansdorfer, M.D.
W. M. Seabold

Neurologist and Psychiatrist

Andrew C. Gillis, M.D.

Associate

Milford Levy, M.D.

OBSTETRICAL DIVISION

E. P. Smith, M.D.

Abram S. Samuels, M.D.
George A. Strauss, M.D.
Ernest Edlavitch, M.D.
William S. Gardner, M.D.
Thomas K. Galvin, M.D.
John J. Erwin, M.D.

Associate Obstetricians

Frank K. Morris, M.D.
Francis W. Gillis, M.D.

GYNECOLOGICAL DIVISION

Gynecologists

William S. Gardner, M.D.

Thomas J. Galvin, M.D.
George A. Strauss, M.D.
Abram Samuels, M.D.
E. P. Smith, M.D.

Associate

J. J. Erwin, M.D.

Assistants

E. S. Edlavitch, M.D.
Frank K. Morris, M.D.

PATHOLOGICAL DIVISION

Walter C. Merkel, M.D.
Hugh R. Spencer, M.D.

Clinical Pathologists

H. T. Collenberg, M.D.
H. R. Peters, M.D.
Charles E. Bramble, Ph.D.

Technicians

Sister Mary Joan
Sister Mary Claude
Sister Mary Celeste
Frances Donovan
Eleanor Behr

X-RAY DEPARTMENT

Radiographer

Albertus Cotton, M.D.

Associate

Harry L. Rogers, M.D.

Technicians

Sister M. Kevin
Elizabeth Crook

MERCY HOSPITAL RESIDENT STAFF

Chief Resident

Meyer H. Zuravin, M.D.

Resident Surgeon

Daniel R. Robinson, M.D.

Assistant Resident Surgeons

Frank H. Cutler, M.D.
William C. Dunnigan, M.D.
Harry F. Kane, M.D.
Lawrence H. Mills, M.D.

Medical Resident

W. Grafton Hersperger, M.D.

Assistant Medical Residents

Irving Freeman, M.D.
William H. Grenzer, M.D.

Resident Gynecologist

Joseph V. Jerardi, M.D.

Resident Obstetrician

G. Cole Herndon, M.D.

Rotating Internes

Reid L. Beers, M.D.
Harold H. Burns, M.D.
Joseph Drozd, M.D.
Marion H. Gillis, Jr., M.D.
E. Jones, Jr., M.D.
Raymond J. Lipin, M.D.
Grant Lund, M.D.
Richard H. Pembroke, Jr., M.D.
George D. Selby, M.D.

DISPENSARY STAFF

Surgeons

Supervisor, Julius J. Leyko, M.D.

I. O. Ridgely, M.D.
John O'Connor, M.D.
H. F. Bongardt, M.D.
I. R. Trimble, M.D.
S. Demarco, M.D.
T. J. Touhey, M.D.
J. W. Nelson, M.D.
Simon Brager, M.D.
Julius Goodman, M.D.
E. E. Covington, M.D.
Richard T. Shackelford, M.D.
William N. McFaul, M.D.
Raymond F. Helfrich, M.D.

Genito-Urinary

A. J. Gillis, M.D.
K. D. Legge, M.D.

Orthopaedists

Albertus Cotton, M.D.
Harry L. Rogers, M.D.
I. H. Maseritz, M.D.

Physicians

Supervisor, Maurice C. Pincoffs, B.S., M.D.
Henry Sheppard, M.D.
Earl L. Chambers, M.D. } *Chiefs of Clinic*
J. M. Miller, M.D.
S. Snyder, M D.
S. A. Tumminello, M.D.

Cardiovascular Diseases

T. C. Wolff, M.D., *Chief of Clinic*

Diseases of the Lung

S. Snyder, M.D., *Chief of Clinic*

Diseases of Metabolism

J. S. Eastland, M.D., *Chief of Clinic*

Allergic Diseases

H. M. Bubert, M.D., *Chief of Clinic*
S. Snyder, M.D.

Diseases of the Stomach

Supervisor, Julius Friedenwald, M.D.
T. Frederick Leitz, M.D.
Theodore H. Morrison, M.D.
M. Feldman, M.D.
Joseph Sindler, M.D.
H. William Primakoff, M.D.

Esophagoscopist

Waitman F. Zinn, M.D.

Nervous Diseases

Supervisor, A. C. Gillis, M.D.
Milford Levy, M.D.
Miriam F. Dunn, M.D.
Philip F. Lerner, M.D.
Harry Goldsmith, M.D.

Pediatricians

Supervisor, Edgar B. Friedenwald, M.D.
W. J. Schmitz, M.D.
Thomas Coonan, M.D.
G. B. Mansdorfer, M.D.

Gynecologists

Abram S. Samuels, M.D., *Chief of Clinic*
Thomas K. Galvin, M.D., *Assistant Chief of Clinic*
E. S. Edlavitch, M.D.
Frank K. Morris, M.D.
F. W. Gillis, M.D.
H. L. Granoff, M.D.

Diseases of Nose and Throat

Waitman F. Zinn, M.D.

Benjamin S. Rich, M.D.
Birkhead MacGowan, M.D.
R. F. McKenzie, M.D.
Horace Strickland, M.D.

Diseases of Eye and Ear

H. K. Fleck, M.D.
J. I. Kemler, MD.
M. Raskin, M.D.
F. A. Pacienza, M.D.

Dermatologist

Llewellyn Lord, M.D.

Social Service Department

Sister Mary Beatrice
Loretta Smith

MERCY HOSPITAL DISPENSARY REPORT

(Year 1935)

Department	*Old*	*New*	*Total*
Surgery	5,035	1,290	6,325
Medicine	2,103	888	2,991
Cardiac	350	68	418
Diabetic	252	5	257
Gynecology	868	442	1,310
Eye and Ear	597	391	988
Nose and Throat	769	565	1,334
Neurology	772	110	882
Pediatrics	396	277	673
Gastro-Intestinal	473	90	563
Dental	195	222	417
Rectal	113	61	174
Orthopedics	1,094	364	1,458
Skin	516	267	783
Genito-Urinary	3,183	418	3,601
Tumor	29	18	47
Total	16,745	5,476	22,221

OTHER CLINICAL FACILITIES

THE BALTIMORE CITY HOSPITALS

The clinical advantages of the University have been largely increased by the liberal decision of the Department of Public Welfare to allow the immense material of these hospitals to be used for the purpose of medical education. There are daily visits and clinics in medicine and surgery by the Staff of the Hospitals. The autopsy material is unsurpassed in this country in amount, thoroughness of study, and the use made of it in medical teaching.

The Baltimore City Hospital consists of the following separate divisions:
The General Hospital, 400 beds.
The Hospital for Chronic Cases, 508 beds.
The Hospital for Tuberculosis, 179 beds.
The Psychopathic Hospital, 275 beds.
Infirmary (Home for Aged) 1053 beds.

STAFF OF BALTIMORE CITY HOSPITALS

Parker J. McMillin, *Superintendent*

VISITING STAFF

Physician-in-Chief	Thomas R. Boggs, S.B., M.D.
Surgeon-in-Chief	Arthur M. Shipley, Sc.D., M.D.
Physician-in-Chief, Tuberculosis Hospital	Harry M. Stein, M.D.
Physician-in-Chief, Psychopathic Hospital	Esther L. Richards, M.D.
Obstetrician-in-Chief	Louis H. Douglass, M.D.
Pediatrician-in-Chief	T. Campbell Goodwin, A.B., M.D.
Visiting Pathologist	S. S. Blackman, A.B., M.D.
Resident Pathologist	R. T. Terry, M.D.
Dental Surgeon-in-Chief	L. P. Henneberger, D.D.S.

ASSOCIATE VISITING STAFF

Surgery	T. Bayron Aycock, M.D. C. A. Reifschneider, M.D. Luther E. Little, M.D. Grant Ward, M.D. E. M. Hanrahan, M.D. I. Ridgeway Trimble, M.D. James C. Owings, M.D.
Tuberculosis	Lawrence M. Serra, M.D.
Obstetrics	J. G. M. Reese, M.D. Margaret Ballard, M.D. Kenneth B. Boyd, M.D. John M. Haws, M.D. Alan F. Guttmacher, M.D. Marius P. Johnson, M.D. Susanne Sterling, M.D.
Pediatrics	Lawson Wilkins, M.D.
Gynecology	R. Gerard Willse, M.D. J. Mason Hundley, Jr., M.D. John T. Hibbitts, M.D.
Ophthalmology	Cecil Bagley, M.D. Frank Walsh, M.D.
Orthopaedics	Allen F. Voshell, M.D. H. Alvan Jones, M.D. Henry F. Ullrich, M.D.
Laryngology	Edward A. Looper, M.D. Harry R. Slack, M.D. Franklin B. Anderson, M.D. Thomas R. O'Rourk, M.D.

Urology	W. Houston Toulson, M.D.
Roentgenology	John W. Pierson, M.D.
Neurological Surgery	Charles Bagley, Jr., M.D. Richard G. Coblentz, M.D.
Neurology	Thomas C. Wolff, M.D. James G. Arnold, Jr. O. R. Langworthy, M.D. Frank Ford, M.D.
Proctology	Monte Edwards, M.D. Lewis Rosenthal, M.D.
Otology	Leroy M. Polvogt, M.D.
Dermatology	Isaac R. Pels, M.D.
Dental Surgery	H. Glenn Waring, D.D.S. Irvin Golboro, D.D.S. Morris M. Bimestefer, D.D.S.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN

This institution is situated on an estate of 75 acres at Hillsdale. The site is just within the northwestern city limits and of easy access from the city proper.

The location is ideal for the treatment of children, in that it affords all the advantages of sunshine and country air.

A complete hospital unit, new in every respect, offers all modern facilities for the care of any orthopaedic condition in children.

The hospital is equipped with 82 beds—endowed, and city and state supported.

The Children's Orthopaedic Dispensary at the University Hospital is maintained in closest affiliation and cares for the cases discharged from the Kernan Hospital. The physiotherapy department is very well equipped with modern apparatus and trained personnel.

STAFF

Surgeon-in-Chief and Medical Director	Allen Fiske Voshell, A.B., M.D.
Attending Orthopaedic Surgeon	Albertus Cotton, A.M., M.D.
Associate Orthopaedic Surgeons	Moses Gellman, B.S., M.D. Harry L. Rogers, M.D.
Resident Orthopaedic Surgeon	E. M. Karp, B.S., M.D.
Consulting Surgeons	J. M. T. Finney, A.B., M.D., D.S.M., F.R.C.S., (Eng., Ire.) Hon. Arthur M. Shipley, Sc.D., M.D.
Consulting Plastic Surgeons	John Staige Davis, B.Sc., M.D. Edward H. Kitlowski, M.D.
Consulting Neurological Surgeon	Charles Bagley, Jr., A.B., M.D.
Consulting Oculist	Harry Friedenwald, M.D.
Oculist	F. A. Pacienza, M.D.
Consulting Aurist and Laryngologist	Edward A. Looper, M.D.

Aurist and Laryngologist	F. B. Anderson, M.D.
Consulting Dentist	Harry B. McCarthy, D.D.S.
Dentist	M. E. Coberth, D.D.S.
Consulting Physicians	Thomas B. Futcher, A.B., M.D. Thomas R. Brown, A.B., M.D. Lewellys F. Barker, A.B., M.D.
Pediatrist	Benjamin Tappan, A.B., M.D.
Dermatologists	Harry M. Robinson, M.D. Leon Ginsberg, M.D.
Consulting Pathologists	Sydney M. Cone, A.B., M.D. Hugh R. Spencer, M.D.
Consulting Neurologist	Irving J. Spear, M.D.
Neurologist	R. V. Seliger, M.D.
Anaesthetists	J. A. Tompkins, M.D. J. D. Holly, M.D.
Roentgenologist	Albertus Cotton, A.M., M.D.
Superintendent	Miss C. Gertrude Forrester, R.N.
Dispensary and Social Service Nurse	Miss Mabel S. Brown, R.N.
Technicians: Physical Therapy and X-Ray	Mrs. Georgiana Wisong Miss Jane Anderson
Instructor in Grammar School	Miss Laura Hampson

LIBRARIES

The University Library, founded in 1813 by the purchase of the collection of Dr. John Crawford, now contains 16,054 volumes, a file of 188 current medical journals, and several thousand pamphlets and reprints. It is well stocked with recent literature, including books and periodicals of general interest. The home of the library is Davidge Hall, a comfortable and commodious building in close proximity to the classrooms and the laboratories of the Medical Department. The library is open daily during the year for use of members of the faculty, the students, and the profession generally.

The Library of the Medical and Chirurgical Faculty of Maryland, containing 50,000 volumes, is open to the students of the school. The leading medical publications of the world are received by the library, and complete sets of many journals are available. Other libraries of Baltimore are the Peabody (250,000 volumes) and the Enoch Pratt Free Library (709,129 volumes).

All these libraries are open to the students of the school without charge.

ORGANIZATION OF THE CURRICULUM

The following curriculum is the result of a thorough revision of teaching in this school in order to meet modern requirements. The multiplication of specialties in medicine and surgery necessitates a very crowded course and the introduction of electives will very soon be depended on to solve some of the difficulties.

The curriculum is organized under eleven departments.

1. Anatomy (including Histology and Embryology).
2. Physiology.
3. Bacteriology and Immunology.
4. Biological Chemistry.
5. Pharmacology and Materia Medica.
6. Pathology.
7. Medicine (including Medical Specialties).
8. Surgery (including Surgical Specialties).
9. Obstetrics.
10. Gynecology.
11. Ophthalmology.

The instruction is given in four years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures and functions of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in Medicine and Surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insures attention to the needs of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

DEPARTMENT OF ANATOMY, INCLUDING GROSS ANATOMY, HISTOLOGY AND EMBRYOLOGY

Carl L. Davis, M.D	Professor of Anatomy
Eduard Uhlenhuth, Ph.D	Professor of Anatomy
Frank H. Figge, A.B., Ph.D	Associate Professor of Gross Anatomy
O. G. Harne	Associate Professor of Histology
John F. Lutz, A.B., M.D	Associate in Histology
Joseph Pokorny, M.D	Instructor in Histology
Jaroslav Hulla, B.S., M.D	Instructor in Histology
Martin J. Hanna, M.D	Instructor in Histology
Arthur G. Siwinski, A.B., M.D	Instructor in Gross Anatomy
William M. Seabold, A.B., M.D	Instructor in Neuro-anatomy
William L. Fearing, M.D	Instructor in Histology
Eugene E. Covington, M.D	Assistant in Gross Anatomy
Joseph Edwin Schenthal, A.B	Weaver Fellow in Anatomy

Gross Anatomy. *First Year.* Total number of hours 350.

The entire course centers around the dissection of the human body. Each student is given opportunity to dissect an entire half (left or right) of the body. The dissection is supplemented by lectures and informal discussions.

Anatomy is taught as an independent science, emphasis being laid on the human species as contrasted with animal morphology. An attempt is made to familiarize the student with the elements of anthropometry, with systematic and regional anatomy, with the principles of topographical anatomy and with osteology.

The actual dissection is preceded by a general examination of the body surface and superficial organs. Opportunity is provided for taking representative measurements of the head, face, trunk and limbs, and of acquiring a knowledge of the use of anthropometric instruments. Throughout the dissection the student is encouraged to take measurements and weights of all the major organs, including the brain and the endocrines, and to obtain a knowledge of the proportions of each organ to the body as a whole, as well as to the variability of these proportions.

The dissection is undertaken in relation to topographical regions of the body, but systematic relations are continually emphasized and, wherever possible, brought out by actual dissection.

Osteology is taught in conjunction with the dissection of the muscles and the study of the functional mechanism of the skeleto-muscular apparatus. The students are provided with skeletal bones, as far as our facilities permit.

Second, Third and Fourth Years. Opportunity is provided for advanced special dissections and for research work in every branch of anatomy. Dr. Uhlenhuth and Dr. Figge.

HISTOLOGY AND EMBRYOLOGY

First Year—150 hours. The course in histology is divided equally between the study of the fundamental tissues and that of organs. Throughout the entire course the embryology of the part being studied precedes the study of the fully developed tissue. Thus embryology becomes a correlated part of the whole subject of microscopic anatomy and not an independent subject.

Each student is furnished a set of histological slides, previously prepared in our own laboratory, thus insuring a uniform and satisfactory quality of material for study and permitting the time of the student to be expended in the study of material rather than in the technic of its preparation. The object of the course is to present the evidence of function as shown by the structure of tissues and organs.

An optional laboratory course is offered. This supplements the required course giving laboratory experience which can not be incorporated in the former. No added charge is made for the course.

NEURO-ANATOMY

Second Year—90 hours. Neuro-anatomy embraces a study of the fundamental structure of the central nervous system as applied to its function. An abundance of material permits of individual dissection of the human brain. A series of appropriately stained sections of the human brain stem is furnished each student for the microscopic study of the internal structure of the nervous system. Dr. Davis, Dr. Lutz.

For a description of the graduate courses offered by the members of the staff, consult the catalog of the Graduate School.

DEPARTMENT OF PHYSIOLOGY

MAGNUS I. GREGERSEN, M.A., Ph.D.	Professor of Physiology
WALTER S. ROOT, Ph.D.	Associate Professor of Physiology
	Assistant Professor of Physiology
ELIZABETH PAINTER, A.B.	Instructor in Physiology
CARROLL LOCKARD CONLEY, A.B.	Teaching Fellow in Physiology
F. F. MCALLISTER, A.B.	Weaver Fellow in Physiology

Three lectures, one conference and two laboratory periods a week. February to May inclusive. The fundamental concepts of physiology are presented in lectures and illustrated by laboratory experiments and demonstrations.

Lectures	46 hours
Conferences	24 hours
Laboratory	160 hours
Total	230 hours

For a description of the graduate courses offered by the members of the staff, consult the catalog of the Graduate School.

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

FRANK W. HACHTEL, M.D.	Professor of Bacteriology
J. A. F. PFEIFFER, M.D.	Instructor in Bacteriology
HENRY F. BUETTNER, M.D.	Instructor in Bacteriology
H. EDMUND LEVIN, M.D.	Assistant in Bacteriology
H. M. BUBERT, M.D.	Assistant in Bacteriology
K. PIERRE DOZOIS, M.S.	Weaver Fellow in Bacteriology

Instruction in bacteriology is given in the laboratory to the students of of the second year during the first semester. This includes the methods of preparation and sterilization of culture media, the study of pathogenic bacteria, and the bacteriological examination of water and milk. The bacteriological diagnosis of the communicable diseases is also included in this course. Animal inoculations are made in connection with the bacteria studied. The most important protozoa are also studied in the laboratory. The principles of general bacteriology are taught by quiz, conference and lecture.

The principles of immunology are presented by means of quizzes, conferences and lectures to the second-year class throughout the second semester, and practical experiments are carried out by the class in laboratory sessions.

	Bacteriology	*Immunology*
Lectures and recitations	16 hours	72 hours
Laboratory	104 hours	
Total	120 hours	72 hours

DEPARTMENT OF BIOLOGICAL CHEMISTRY

H. Boyd Wylie, M.D	Professor of Biological Chemistry
Emil G. Schmidt, Ph.D	Assistant Professor of Biological Chemistry
Frank N. Ogden, M.D	Associate in Biological Chemistry
Dorothy E. Schmalzer, B.S	Assistant in Biological Chemistry
John E. Savage, B.S., M.D	Hitchcock Fellow in Obstetrics, Pursuing Related Biochemical Problems
Maurice J. Schmulovitz, A.B	Weaver Fellow in Biological Chemistry

This course is designed to present the fundamental concepts of biological chemistry. The phenomena of living matter, and its principal ingredients, secretions and excretions are discussed in lectures and conferences and examined experimentally. Training is afforded in routine biochemical methods of investigation.

Lectures	66 hours
Conferences	26 hours
Laboratory	88 hours
Total	180 hours

For a description of the graduate courses offered by the members of the staff, consult the catalog of the Graduate School.

DEPARTMENT OF PHARMACOLOGY

John C. Krantz, Jr., Ph.D	Professor of Pharmacology
C. Jelleff Carr, M.S	Instructor in Pharmacology
Ruth Musser, A.B., M.S	Instructor in Pharmacology and Secretary of Department
William Ellsworth Evans, M.S., Ph.D	Instructor in Pharmacology
Marius P. Johnson, A.B., M.D	Assistant in Pharmacology
William G. Harne	Demonstrator in Pharmacology
Frances F. Beck, A.B., M.S	Isaac E. Emerson Fellow in Pharmacology

This course is designed to include those phases of pharmacology necessary for an intelligent use of drugs in the treatment of disease. The didactic instruction includes materia medica, pharmacy, prescription-writing, toxicology, posology, pharmacodynamics, and experimental therapeutics. The laboratory exercises parallel the course of lectures.

In addition, optional conference periods and lectures are available for students desiring further instruction or advice.

Lectures	80 hours
Laboratory	96 hours
Total	176 hours

For a description of the graduate courses offered by the members of the staff, consult the catalog of the Graduate School.

DEPARTMENT OF PATHOLOGY

Hugh R. Spencer, M.D.	Professor of Pathology
Sydney M. Cone, A.B., M.D.	Associate Professor of Pathology
Robert B. Wright, B.S., M.D.	Assistant Professor of Pathology
C. Gardner Warner, A.B., M.D.	Assistant Professor of Pathology
Albert E. Goldstein, M.D.	Associate in Pathology
Walter C. Merkel, A.B., M.D.	Associate in Pathology
M. Alexander Novey, A.B., M.D.	Instructor in Pathology
Wm. S. Love, Jr., A.B., M.D.	Instructor in Pathology
Leon Freedom, M.D.	Instructor in Pathology
William R. Geraghty, B.S., M.D.	Instructor in Pathology
Benjamin Abeshouse, Ph.B., M.D.	Instructor in Pathology
Milton S. Sacks, B.S., M.D.	Instructor in Pathology
W. R. Johnson, M.D.	Instructor in Pathology
James G. Arnold, A.B., M.D.	Assistant in Pathology
Conrad B. Acton, B.S., M.D.	Assistant in Pathology
John E. Savage, B.S., M.D.	Assistant in Pathology
Robert W. Johnson, M.D.	Assistant in Pathology
Harry C. Hull, M.D.	Assistant in Pathology
Harry V. Langeluttig, A.B., M.D.	Assistant in Pathology
William M. Seabold, A.B., M.D.	Assistant in Pathology
J. E. Wilson, Jr., A.B., M.D.	Assistant in Pathology

Courses of instruction in pathology are given during the second and third years. These courses are based on previous study of normal structure and function and aim to outline the natural history of disease. Instruction is made as practical as possible so that the student may become familiar with the appearance of tissues in disease and may be able to correlate anatomical lesions with clinical symptoms and signs.

1. General Pathology. (*Second Year.*) This course includes the study and demonstration of disturbances of the body fluids, disturbances of structure, nutrition and metabolism of cells, disturbances of fat, carbohydrate and protein metabolism, disturbances in pigment metabolism, inflammation and tumors.

2. Applied Pathology. Including Gross Morbid Anatomy and Morbid Physiology. (*Third Year.*) In this course the special relation of lesions to clinical symptoms and signs is emphasized.

In the laboratory the class is divided into groups for the study of classified autopsy material.

3. Autopsies. (*Third Year.*) Small groups of students attend autopsies at the morgues of the University Hospital and Baltimore City Hospitals. They are required to assist at autopsies and to prepare protocols.

4. Clinical Pathological Conference. (*Fourth Year.*) In collaboration with the Department of Medicine, material from autopsies is studied with reference to the correlation of the clinical aspects with the pathological findings.

5. Advanced Work in Pathology. Properly qualified students will be permitted to carry out advanced or research work along the lines of experimental pathology.

Summary

Second Year	
Lectures	50 hours
Laboratory	118 hours
Total	168 hours
Third Year	
Lectures	30 hours
Laboratory	130 hours
Total	160 hours
Fourth year	
Clinical Pathological Conference	30 hours

DEPARTMENT OF MEDICINE

Maurice C. Pincoffs, B.S., M.D	Professor of Medicine
Jos. E. Gichner, M.D	Professor of Clinical Medicine and Physical Therapeutics
G. Carroll Lockard, M.D	Professor of Clinical Medicine
Harvey G. Beck, Sc.D., M.D	Professor of Clinical Medicine
Harry M. Stein, M.D	Professor of Clinical Medicine
Paul W. Clough, B.S., M.D	Associate Professor of Medicine
C. C. W. Judd, A.B., M.D	Associate Professor of Medicine
Sydney R. Miller, A.B., M.D	Associate Professor of Medicine
Walter A. Baetjer, A.B., M.D	Associate Professor of Medicine
Thomas R. Sprunt, M.D	Associate Professor of Medicine
W. S. Love, Jr., A.B., M.D	Associate Professor of Medicine
William H. Smith, M.D	Associate Professor of Clinical Medicine
H. J. Maldeis, M.D	Associate Professor of Medical Jurisprudence
S. Lloyd Johnson, A.B., L.L.B., M.D	Assistant Professor of Medicine
John G. Huck, M.D	Assistant Professor of Medicine
George McLean, M.D	Assistant Professor of Medicine

L. A. M. Krause, M.D	Assistant Professor of Medicine
H. R. Peters, M.D	Assistant Professor of Medicine
John E. Legge, M.D	Assistant Professor of Medicine
Thomas C. Wolff, M.D	Assistant Professor of Medicine
E. B. Freeman, M.D	Lecturer in Medicine
Charles R. Goldsborough, M.D	Lecturer in Medicine
H. M. Bubert, M.D	Associate in Medicine
J. S. Eastland, M.D	Associate in Medicine
T. Nelson Carey, M.D	Associate in Medicine
Wetherbee Fort, M.D	Associate in Medicine
Frank J. Geraghty, M.D	Associate in Medicine
L. P. Gundry, M.D	Associate in Medicine
M. G. Gichner, M.D	Instructor in Medicine
Samuel T. Helms, M.D	Instructor in Medicine
Earl L. Chambers, M.D	Instructor in Medicine
E. H. Tonolla, M.D	Instructor in Medicien
David Tenner, M.D	Instructor in Medicine
J. Howard Burns, M.D	Instructor in Medicine
R. B. Mitchell, Jr., M.D	Instructor in Medicine
Samuel Legum, A.B., M.D	Instructor in Medicine
Nathaniel Beck, M.D	Assistant in Medicine
Carl Benson, M.D	Assistant in Medicine
A. Scagnetti, M.D	Assistant in Medicine
W. H. Triplett, M.D	Assistant in Medicine
M. Paul Byerly, M.D	Assistant in Medicine
H. Edmund Levin, M.D	Assistant in Medicine
J. G. Feman, M.D	Assistant in Medicine
Morris Fine, M.D	Assistant in Medicine
Harry V. Langeluttig, A.B., M.D	Assistant in Medicine
Philip D. Flynn, M.D	Assistant in Medicine
Richard France, M.D	Assistant in Medicine
Conrad Acton, M.D	Assistant in Medicine
M. S. Shiling, M.D	Assistant in Medicine
Robert W. Garis, M.D	Assistant in Medicine
Sol Smith, M.D	Assistant in Medicine
W. Grafton Hersperger, M.D	Assistant in Medicine
G. W. Brugler, M.D	Hitchcock Fellow in Medicine

GENERAL OUTLINE

Second Year

Introduction to clinical medicine.

- (a) Introductory physical diagnosis.
  (1 hour a week, first semester; 2 hours a week, second semester.)
- (b) Medical clinics.
  (1 hour a week, second semester.)

Third Year

I. The methods of examination (13 hours a week).

- (a) History taking.
- (b) Physical diagnosis.
- (c) Clinical pathology.

These subjects are taught and practiced in the hospital out-patient department and in the clinical laboratory.

II. The principles of medicine (5 hours a week).
  (a) Lectures, clinics and demonstrations in general medicine, neurology, pediatrics, psychiatry and preventive medicine.
III. The principles of therapeutics (10 hours a week).
  Lectures and demonstrations.

FOURTH YEAR

The practice of medicine.
I. Clinical clerkship on the medical wards.
  (26 hours a week for ten weeks.)
  (a) Responsibility, under supervision, for the history, physical examination, laboratory examinations and progress notes of assigned cases.
  (b) Ward classes in general medicine, the medical specialties, and therapeutics.
II. Clinics in general medicine and the medical specialties.
  (6 hours a week.)
III. Dispensary work in the medical specialties.
IV. Clinical pathological conferences (1 hour a week).

MEDICAL DISPENSARY WORK

The medical dispensaries of both the Mercy and the University Hospitals are utilized for teaching in the third year. Each student spends two hours daily for ten weeks in dispensary work. The work is done in groups of four to six students under an instructor. Systematic history-taking is especially stressed. Physical findings are demonstrated. The student becomes familiar with the commoner acute and chronic disease processes.

PHYSICAL DIAGNOSIS

Second Year. Didactic lectures and practical demonstrations in topographical anatomy and normal physical signs.

Third Year. The class is divided into small groups, and each section receives instruction for two hours daily for ten weeks. This course is given at the City Hospitals. The large clinical material there is utilized to give each student the opportunity to familiarize himself with the common types of bodily structure, with the normal variations in physical signs and with the physical signs of the chief pulmonary, circulatory and abdominal diseases.

A course of lectures (1 hour a week) on physical diagnosis supplements the practical work in this subject.

THERAPEUTICS

Third Year. General therapeutics and materia medica are taken up and an effort is made to familiarize the student with the practical treatment of disease. The special therapy of the chief diseases is then reviewed. One hour a week. Dr. Lockard.

Fourth Year. Special consideration is given to the practical application of therapeutic principles in bedside teaching and the chief therapeutic methods are demonstrated.

Students attend therapeutic ward rounds once a week throughout their medical trimester.

TUBERCULOSIS

During the third year in connection with the instruction in physical diagnosis a practical course is given at the Municipal Tuberculosis Hospital. Stress is laid upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

CARDIOLOGY

During the fourth year an elective course in cardiology is offered at the Mercy Hospital. The course occupies one and one-half hours weekly. Physical diagnosis, electrocardiography and the therapeutic management of cardiac cases are stressed.

SYPHILIS

Third Year. During the third year the subject of syphilis is dealt with in the lecture course.

Fourth Year. An elective course in the therapeutic management of syphilis is offered in the dispensary.

CLINICAL PATHOLOGY

John G. Huck, M.D.	Assistant Professor of Medicine Head of Department of Clinical Pathology
H. J. Maldeis, M.D	Associate Professor of Medical Jurisprudence
S. Lloyd Johnson, A.B., LL.B., M.D.	Assistant Professor of Medicine
Samuel T. Helms, M.D	Instructor in Medicine
E. M. Reese, M.S	Assistant in Medicine

During the third year the student is thoroughly drilled in the technic of the usual clinical laboratory work, so that he is able to perform all routine examinations which may be called for during his fourth year, in connection with the work in the wards and dispensary.

The practical work is supplemented by a series of didactic lectures and demonstrations in which the entire teaching staff of the department takes an active part. The microscopical and chemical study of blood, exudates and transudates, gastric juice, spinal fluid, feces and urine are successively taken up, and special attention directed to the clinical significance of the findings.

Clinical parasitology from the standpoint of the infecting agent and the carrier is given careful consideration.

The entire course is thoroughly practical. Each student has his own microscope and is provided with blood counters and hemoglobinometer for his exclusive use, and every two students are equipped with a special laboratory outfit for all routine purposes.

During the fourth year the student applies what he has learned during the preceding year in the laboratories of the various affiliated hospitals. He is also supplied with a laboratory outfit which is sufficiently complete to enable him to work independently of the general equipment. Special instructors are available during certain hours to give necessary assistance and advice.

Lectures	32 hours
Laboratory	96 hours
Total	128 hours

GASTRO-ENTEROLOGY

	Professor of Gastro-Enterology
T. Fred Leitz, M.D	Clinical Professor of Gastro-Enterology
Theodore H. Morrison, M.D	Clinical Professor of Gastro-Enterology
Maurice Feldman, M.D	Assistant Professor of Gastro-Enterology
Zachariah Morgan, M.D	Assistant Professor of Gastro-Enterology
Samuel Morrison, M.D	Assistant Professor of Gastro-Enterology
Joseph Sindler, M.D	Associate in Gastro-Enterology
M. S. Koppelman, M.D	Instructor in Gastro-Enterology
Z. Vance Hooper, M.D	Instructor in Gastro-Enterology
C. Victor Richards, M.D	Instructor in Gastro-Enterology
Ernest Levi, M.D	Instructor in Gastro-Enterology
H. William Primakoff, M.D	Assistant in Gastro-Enterology
Albert J. Shochat, M.D	Assistant in Gastro-Enterology
Beatrice Bamberger, M.D	Assistant in Gastro-Enterology

Third Year. A series of six lectures is given on the diseases of the digestive tract.

Fourth Year. Clinics and demonstrations to the class for one hour a week. Dispensary instruction to small groups throughout the entire session. Practical instruction is given in the use of modern methods of study of the diseases of the gastro-intestinal tract.

PSYCHIATRY

Ross McC. Chapman, M.D	Professor of Psychiatry
Ralph P. Truitt, M.D	Associate Professor of Psychiatry
Harry Goldsmith, M.D	Assistant Professor of Psychiatry
Lawrence F. Woolley, M.D	Assistant Professor of Psychiatry
H. W. Newell, M.D	Assistant Professor of Psychiatry
Harry M. Murdock, M.D	Assistant Professor of Psychiatry
Chester L. Reynolds, M.D	Associate in Psychiatry

First Year. The student attends six lectures dealing with the development and function of the normal personality.

Second Year. The student attends fourteen lectures dealing with psychopathology.

Third Year. Psychopathology continued, six lectures; reaction types, twelve hours, lectures and demonstrations; the psychoses, six hours, lectures and demonstrations; history-taking and actual study of cases, outpatient clinic, thirty hours.

Fourth Year. The neuroses, psychoneuroses, psychoses, lectures and demonstrations, ten hours. In this year the class is divided into sections for clinical conferences on selected cases.

PEDIATRICS

C. Loring Joslin, M.D	Professor of Pediatrics
Edgar B. Friedenwald, M.D	Professor of Clinical Pediatrics
T. Campbell Goodwin, M.D	Associate Professor of Pediatrics
John H. Traband, M.D	Assistant Professor of Pediatrics
Albert Jaffe, M.D	Assistant Professor of Pediatrics
A. H. Finkelstein, M.D	Assistant Professor of Pediatrics
Frederick Smith, M.D	Assistant Professor of Pediatrics
William J. Todd, M.D	Associate in Pediatrics
William G. Geyer, M.D	Associate in Pediatrics
Clewell Howell, M.D	Associate in Pediatrics
Samuel S. Glick, M.D	Associate in Pediatrics
F. Stratner Orem, M.D	Associate in Pediatrics
R. M. Hening, M.D	Instructor in Pediatrics
M. Paul Byerly, M.D	Instructor in Pediatrics
G. Bowers Mansdorfer, M.D	Instructor in Pediatrics
J. Edmund Bradley, M.D	Instructor in Pediatrics
John A. Askin, M.D	Instructor in Pediatrics
William M. Seabold, M.D	Instructor in Pediatrics
Thomas J. Coonan, M.D	Instructor in Pediatrics
W. J. Schmitz, M.D	Assistant in Pediatrics
Israel P. Meranski, M.D	Assistant in Pediatrics
H. D. Franklin, M.D	Assistant in Pediatrics
H. Whitney Wheaton, M.D	Assistant in Pediatrics
Gustav Highstein, M.D	Assistant in Pediatrics
S. C. Feldman, M.D	Assistant in Pediatrics
Nelsa Lee Wade, M.D	Assistant in Pediatrics
Lauriston L. Keown, M.D	Assistant in Pediatrics
O. Walter Spurrier, M.D	Assistant in Pediatrics

Third Year. A. Lectures on infant feeding and the fundamentals of diseases of infants and children. (15 hours.)

B. Lectures on contagious diseases in conjunction with the Department of Hygiene and Preventive Medicine. (14 hours.)

C. A special course in physical diagnosis is given at City Hospitals. (20 hours.)

D. Clinical conferences demonstrating diseases of the newly-born. (6 hours.)

Fourth Year. A. Amphitheatre Clinic at which patients are shown to demonstrate the chief features of diseases discussed. (30 hours.)

B. Conferences and demonstrations are given in problems concerning diagnosis, care, treatment and clinical pathology of diseases of infants and children; also in the preparation of theses on assigned pediatric subjects. (30 hours.)

C. Clinical clerkship on the pediatric wards. This includes experience in the taking of histories, making physical examinations and doing routine laboratory work, and in following up of the patient's progress, all under the supervision of members of the visiting staff of the Department of Pediatrics. (140 hours.)

D. Instruction in the pediatric clinic of the out-patient department of the University Hospital. This consists of 1½ hours daily for five weeks—30 minutes each day being devoted to clinical demonstration of some interesting case by a member of the staff; one hour daily to the taking of histories and the making of a physical examination under supervision of one of the staff instructors. (45 hours.)

Total hours devoted to the teaching of pediatrics: 300.

NEUROLOGY

Irving J. Spear, M.D	Professor of Neurology
Andrew C. Gillis, A.M., M.D., LL.D	Professor of Neurology
G. M. Settle, A.B., M.D.,	Associate Professor of Neurology and Clinical Medicine
Milford Levy, M.D	Assistant Professor of Neurology
Leon Freedom, M.D	Assistant Professor of Neurology
Benjamin Pushkin, M.D	Associate in Neurology
James G. Arnold, Jr., M.D	Instructor in Neurology
Philip F. Lerner, A.B., M.D	Assistant in Neurology

Third Year. Ten lecture-demonstrations are given in which the major types of diseases of the nervous system are presented. A short course is also given at the Baltimore City Hospitals, consisting of six periods of two hours each, in which the students in small groups carry out complete neurologic examinations of selected cases which illustrate the chief neurologic syndromes.

Fourth Year. Clinical conference one hour each week to the entire class. This subject is taught at the University and Mercy Hospitals. All patients presented at these clinics are carefully examined; complete written records are made by the students who demonstrate the patients before the class. The patients are usually assigned one or two weeks before they are presented, and each student in the class must prepare one or more cases during the year.

Ward Class Instruction. In small sections at the University and Mercy Hospitals. In these classes the students come in close personal contact with the patients in the wards under the supervision of the instructor.

Dispensary Instruction. Small sections are instructed in the dispensaries of the University and Mercy Hospitals four afternoons each week. In this way students are brought into contact with nervous diseases in their early and late manifestations.

HYGIENE AND PREVENTIVE MEDICINE

Huntington Williams, M.D., Dr.P.H.	Professor of Hygiene and Public Health
William H. F. Warthen, M.D.	Associate in Hygiene and Public Health
Myron G. Tull, M.D.	Instructor in Hygiene and Public Health

Third Year. One hour lecture to the whole class each Monday from September to May. Basic instruction is given in the clinical and public health aspects of the communicable diseases. The lectures are under the auspices of the Department of Medicine and are given by staff members in that department, including physicians representing Pediatrics, and Hygiene and Preventive Medicine.

Fourth Year. Two hour instruction periods for the entire class, in groups of ten to fifteen students on six Wednesday afternoons. These sessions enable the students themselves to prepare birth and death certificates, to vaccinate against smallpox and to conduct other practical public health procedures. In addition there are four Wednesday afternoon field inspection trips for each third of the class. These trips, under guidance of full time public health workers, include visits to (1) city water filtration plant, (2) rural dairy farm, (3) milk pasteurization plant, ice cream plant and bakery and (4) industrial plant which has an active program of hygiene. Elective case work in association with the Western Health District.

The course deals with the fundamentals of public health and supplements the work in the third year. The major emphasis in both years is on the practice of preventive medicine and the relation of prevention to diagnosis and treatment. The entire class, in small groups, receives practical instruction at Sydenham Hospital, the one-hundred bed communicable disease hospital of the Baltimore City Health Department.

MEDICAL JURISPRUDENCE

H. J. Maldeis, M.D.	Associate Professor of Medical Jurisprudence Baltimore City Post Mortem Physician

Third Year. One hour each week for three weeks.

This course embraces a summary of the following: Proceedings in criminal and civil prosecution, medical evidence and testimony, identity and its general relations, sexual abnormalities, personal identity, impotence and sterility, rape, criminal abortions, signs of death, wounds in their medico-legal relations, death—natural and homicidal, malpractice, insanity, and medico-legal autopsies.

DEPARTMENT OF SURGERY

Arthur M. Shipley, Sc.D., M.D	Professor of Surgery
Alexius McGlannan, A.M., M.D., LL.D	Professor of Surgery
Nathan Winslow, A.M., M.D	Professor of Clinical Surgery
Page Edmunds, M.D	Professor of Traumatic Surgery
Walter D. Wise, M.D	Professor of Clinical Surgery
Frank S. Lynn, M.D	Professor of Clinical Surgery
Elliott H. Hutchins, A.M., M.D	Professor of Clinical Surgery
Charles Reid Edwards, M.D	Professor of Clinical Surgery
Charles Bagley, Jr., A.B., M.D	Professor of Neurological Surgery
F. L. Jennings, M.D	Professor of Clinical Surgery
Robert P. Bay, M.D	Professor of Oral Surgery
Thomas R. Chambers, A.M., M.D	Associate Professor of Surgery
R. W. Locher, M.D	Associate Professor of Clinical Surgery
A. M. Evans, M.D	Associate Professor of Surgery
Edward S. Johnson, M.D	Associate Professor of Surgery
D. J. Pessagno, M.D	Associate Professor of Surgery
Charles A. Reifschneider, M.D	Associate Professor of Surgery
Monte Edwards, M.D	Associate Professor of Surgery
Cyrus F. Horine, M.D	Associate Professor of Surgery
N. Clyde Marvel, M.D	Associate Professor of Surgery
I. O. Ridgley, M.D	Associate in Surgery
H. F. Bongardt, M.D	Associate in Surgery
Thomas B. Aycock, B.S., M.D	Associate in Surgery
Richard G. Coblentz, M.D	Associate in Neurological Surgery
Grant E. Ward, A.B., M.D	Associate in Surgery
W. R. Johnson, M.D	Instructor in Surgery
E. M. Hanrahan, A.B., M.D	Instructor in Surgery
S. Demarco, M.D	Instructor in Surgery
Karl J. Steinmueller, A.B., M.D	Instructor in Surgery
W. W. Walker, M.D	Instructor in Surgery
J. J. Leyko, M.D	Instructor in Surgery
George H. Yeager, B.S., M.D	Instructor in Surgery
Luther E. Little, M.D	Instructor in Surgery
J. Frank Hewitt, A.B., M.D	Instructor in Surgery
J. G. Onnen, M.D	Instructor in Surgery
Dwight Mohr, M.D	Assistant in Surgery
William R. Geraghty, B.S., M.D	Assistant in Surgery
Howard B. McElwain, M.D	Assistant in Surgery
A. V. Buchness, M.D	Assistant in Surgery
T. J. Touhey, M.D	Assistant in Surgery
Clyde F. Karns, M.D	Assistant in Surgery
Paul Schenker, M.D	Assistant in Surgery

Robert W. Johnson, M.D	Assistant in Surgery
Frank K. Morris, A.B., M.D	Assistant in Surgery
J. Willis Guyton, M.D	Assistant in Surgery
Wm. N. McFaul, Jr., M.D	Assistant in Surgery
Samuel H. Culver, M.D	Assistant in Surgery
Simon H. Brager, M.D	Assistant in Surgery
C. W. Peake, M.D	Assistant in Surgery
James C. Owings, M.D	Assistant in Surgery
Albert R. Wilkerson, M.D	Assistant in Surgery
J. W. Nelson, M.D	Assistant in Surgery
Julius Goodman, M.D	Assistant in Surgery
I. Ridgeway Trimble, M.D	Assistant in Surgery
Arthur G. Siwinski, A.B., M.D	Assistant in Surgery
J. H. Wilkerson, M.D	Assistant in Surgery
L. T. Chance, M.D	Assistant in Surgery
Samuel McLanahan, Jr., M.D	Assistant in Surgery
W. Allen Deckert, Jr., M.D	Assistant in Surgery
Raymond F. Helfrich, M.D	Assistant in Surgery
Harry C. Hull, M.D	Assistant in Surgery
Samuel E. Proctor, M.D	Assistant in Surgery
George Govatos, M.D	Assistant in Surgery
Francis W. Gillis, M.D	Assistant in Surgery
R. Walter Graham, Jr., M.D	Assistant in Surgery
H. Alvan Jones, M.D	Assistant in Surgery
Richard T. Shackelford, M.D	Assistant in Surgery

The teaching is done in the anatomical laboratory, the dispensaries, wards, clinical laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and operating rooms of the Baltimore City Hospitals.

Instruction is given by means of lectures, recitations, dispensary work, bedside instruction, ward classes, and clinics. The work begins in the second year, and continues throughout the third and fourth years.

Second Year

Topographic and Surgical Anatomy. The course is designed to bridge the gap between anatomy in the abstract and clinical anatomy as applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory, and students are required to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected to bring out outlines and relations of structures.

Didactic Lectures. Two hours a week for one semester, augmented by demonstrations with specimens, charts, and cross sections. Dr. Monte Edwards.

Laboratory. Five hours a week for 16 weeks. Dr. Monte Edwards assisted by Drs. Yeager, Hull and Jones.

Principles of Surgery. This course includes history-taking, records of physical examinations and of operations and progress notes; the preparation of surgical dressing, suture materials and solutions. It includes inflammation, infections, ulcers, gangrene, fistulae and sinuses, hemorrhage, shock and tumors. Lectures and conferences, two hours per week for one semester, to the entire class. Dr. C. R. Edwards.

Third Year

General and Regional Surgery. Lectures, recitations and clinics on the principles of surgery and general surgery are given three hours a week to the entire class. Drs. Lynn and Wise.

The class is divided into groups and receives instruction in history-taking, gross pathology, and surgical diagnosis—at the bedside and in the deadhouse of the Baltimore City Hospitals. Drs. Shipley, Reifschneider, Aycock and Little.

Operative Surgery. Instruction is given in operative surgery upon the cadaver and on dogs. The class is divided into sections, and each section is given practical and individual work under the supervision of the instructors. Dr. Lynn, assisted by Drs. Winslow, E. S. Johnson, Aycock, Demarco, Pessagno, Onnen, W. R. Johnson, Steinmueller, R. W. Johnson, Culver, Brager, Walker, Karns, Gillis, Peake, Proctor, Govatos, Ullrich and Deckert.

Fractures and Dislocations. This course consists of instruction in the various forms of fractures, dislocations and their treatment. There is a regular schedule of didactic lectures, which is supplemented by practical demonstrations in diagnosis and treatment.

Surgical Dispensary. Under supervision, the student takes the history, makes the physical examinations, attempts the diagnosis, and, as far as possible, carries out the treatment of the ambulatory surgical patients in the University and in the Mercy Hospitals. Mercy Hospital—Dr. Leyko assisted by the entire dispensary staff. University Hospital—Dr. C. R. Edwards assisted by the entire dispensary staff.

Fourth Year

Clinics. A weekly clinic is given at the Mercy and at the University Hospitals to one-half the class throughout the year. As far as possible this is a diagnostic clinic. Mercy Hospital—Dr. Wise. University Hospital—Dr. Shipley.

Surgical Pathology. A weekly exercise of one hour at Mercy Hospital for one semester at which specimens from the operating room and museum are studied in the gross and microscopically in relation to the case history. Dr. McGlannan.

Traumatic Surgery. Operative and post-operative treatment of accident cases, with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. Edmunds.

CLINICAL CLERKSHIP. The personal study of assigned hospital patients, under supervision of the staffs of the University and Mercy Hospitals, history-taking, and physical examination of patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

WARD CLASSES. Ward class instruction in small groups will consist of ward rounds, surgical diagnosis, treatment and the after-care of operative cases. Mercy Hospital—Drs. Wise, Hutchins, Jennings, Pessagno and Marvel. University Hospital—Drs. Shipley, Edmunds, Lynn and Edwards.

ANAESTHESIA

S. GRIFFITH DAVIS, M.S., M.D.	Professor of Anaesthesia
E. HOLLISTER DAVIS, A.B., M.D.	Assistant in Anaesthesia
MARY J. O'BRIEN, R.N.	Anaesthetist

THIRD YEAR

Lectures on the general physiology of anaesthesia, with consideration of special physiology of each anaesthetic agent. Methods of induction and administration of anaesthesia. Factors influencing the selection of the anaesthetic and types of anaesthetic agents. Preparation and care of the anaesthetized patient.

The lectures are correlated with practical demonstrations during operative clinics at the City Hospitals.

FOURTH YEAR

During operative clinics in both surgery and gynecology each student will be given practical instruction in the administration of anaesthetics and will be required to record such changes as take place in blood pressure, pulse and respiration.

DERMATOLOGY

HARRY M. ROBINSON, M.D.	Professor of Clinical Dermatology
JOHN R. ABERCROMBIE, A.B., M.D.	Associate in Dermatology
FRANCIS ELLIS, A.B., M.D.	Associate in Dermatology
HAROLD M. GOODMAN, A.B., M.D.	Associate in Dermatology
ARTHUR C. MONNINGER, M.D.	Instructor in Dermatology
JOSEPH C. BERNSTEIN, M.D.	Assistant in Dermatology
ROBERT B. TAYLOR, M.D.	Assistant in Dermatology

Clinical conferences are held one hour each week with the entire class. This course consists of demonstrations of the common diseases of the skin in addition to a number of lectures on the general principles of dermatology. Dr. Robinson.

Dispensary instruction in the diagnosis and treatment of skin diseases is given daily at the University Hospital by Drs. Robinson, Ellis, Goodman and Monninger. A similar course of instruction is given at the Mercy Hospital on Tuesdays, Thursdays and Saturdays. These courses are devised for the specific purpose of giving the student close and intimate contact with skin diseases. Students are assigned cases and under supervision are permitted to diagnose and administer accepted treatment.

ORTHOPAEDIC SURGERY

Allen Fiske Voshell, A.B., M.D.	Professor of Orthopaedic Surgery
Albertus Cotton, A.M., M.D.	Professor of Orthopaedic Surgery
Compton Riely, M.D.	Clinical Professor of Orthopaedic Surgery
Moses Gellman, B.S., M.D.	Associate Professor of Orthopaedic Surgery
Harry L. Rogers, M.D.	Associate Professor of Orthopaedic Surgery
Henry F. Ullrich, M.D.	Assistant in Orthopaedic Surgery

In this course didactic, clinical, bedside and out-patient instruction is given. This instruction is provided in the University Hospital Amphitheatre, Mercy Hospital and Dispensary, Kernan Hospital and Industrial School for Crippled Children at "Radnor Park" and in the Dispensary of the University Hospital.

Lectures or clinics are held once a week at each of the hospitals named in town. In addition, a weekly bedside clinic is held for small sections of the class at "Radnor Park" and Mercy Hospital. Daily teaching in the Dispensary is stressed.

The course covers instruction in the special methods of examination, pathology, diagnosis and treatment in this specialty.

Brief outlines and demonstrations are also given of the apparatus employed in physiotherapy, muscle training and corrective gymnastics.

ROENTGENOLOGY

Henry J. Walton, M.D.	Professor of Roentgenology
Albertus Cotton, A.M., M.D.	Professor of Roentgenology
Eugene L. Flippin, M.D.	Associate in Roentgenology
Walter L. Kilby, M.D.	Assistant in Roentgenology

During the academic year small groups of the fourth year class are given weekly demonstrations in the diagnostic and therapeutic uses of the Roentgen rays. An effort is made to familiarize the student with the appearance of normal Roentgenograms, after which instruction is given in the interpretation of the more common pathological lesions seen on the Roentgen films and fluoroscopic screen. The history, physics and practical application of the Roentgen rays are alluded to, but not stressed. Weekly conferences are held with the medical and pathological departments, which are also open to members of the fourth year class.

DISEASES OF THE NOSE AND THROAT

Edward A. Looper, M.D., D.Oph.	Professor of Diseases of the Nose and Throat
Waitman F. Zinn, M.D.	Clinical Professor of Diseases of the Nose and Throat
Franklin B. Anderson, M.D.	Associate in Diseases of the Nose and Throat
W. Raymond McKenzie, M.D.	Associate in Diseases of the Nose and Throat
Thomas R. O'Rourk, M.D.	Associate in Diseases of the Nose and Throat
Birkhead Macgowan, M.D.	Assistant in Diseases of the Nose and Throat

Third Year. Instruction to entire class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and modern methods of diagnosis. Lectures illustrated by lantern slides are given one hour weekly throughout the second semester by Dr. Looper.

Fourth Year. Dispensary instruction one and one-half hours daily, to small sections at the University and the Mercy Hospitals. The student is given opportunity to study, diagnose and treat patients under supervision. Ward classes and clinical demonstrations are given in periods of one and one-half hours weekly throughout the session in the University and the Mercy Hospitals.

The Looper Clinic, recently established in the University Hospital for bronchoscopy and esophagoscopy, affords unusual opportunities for students to study diseases of the larynx, bronchi and esophagus. The clinic is open to students daily from 2 to 4 P.M., under direction of Dr. Looper.

The Mercy Hospital Clinic for bronchoscopy and esophagoscopy is under the direction of Dr. Zinn. In these two clinics the etiology, symptomatology, diagnosis and treatment of foreign bodies in the air and food passages, as well as bronchoscopy, are taught to students, as an aid in the diagnosis and treatment of diseases of the lungs.

GENITO-URINARY SURGERY

W. H. Toulson, A.B., M.Sc., M.D.	Professor of Genito-Urinary Surgery
A. J. Gillis, M.D.	Clinical Professor of Genito-Urinary Surgery
Austin H. Wood, M.D.	Associate in Genito-Urinary Surgery
L. J. Millan, M.D.	Associate in Genito-Urinary Surgery
K. D. Legge, M.D.	Associate in Genito-Urinary Surgery
L. K. Fargo, M.D.	Associate in Genito-Urinary Surgery
John F. Hogan, M.D.	Associate in Genito-Urinary Surgery
Samuel T. Helms, M.D.	Instructor in Genito-Urinary Surgery
W. A. H. Councill, M.D.	Instructor in Genito-Urinary Surgery
Harry S. Shelley, B.S., M.D.	Assistant in Genito-Urinary Surgery

Third Year. This course is given from eight to ten hours to the entire class. It consists of lectures and demonstrations including the use of lantern slides and motion pictures. Dr. Toulson.

Fourth Year. The course in this year includes explanations and demonstrations of urethroscopy, cystoscopy, ureteral catheterization, renal function tests, urography, urine cultures and the various laboratory procedures. The teaching consists of clinics and ward rounds to small groups, and attendance by members of the senior class upon the out-patients in the dispensary. The student here is placed much on his own responsibility in arriving at a diagnosis. Members of the Staff are in constant attendance for consultations. These dispensary classes are conducted at both the Mercy and University Hospitals where practically every variety of venereal disease is here encountered and used for teaching purposes.

DISEASES OF THE RECTUM AND COLON

Charles F. Blake, A.M., M.D.	Professor of Diseases of Rectum and Colon
J. Dawson Reeder, M.D.	Professor of Diseases of Rectum and Colon
Monte Edwards, M.D.	Associate in Diseases of Rectum and Colon
James C. Owings, M.D.	Assistant in Diseases of the Rectum and Colon

Third Year. Five hours to the entire class. This course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and will cover the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Reeder and Dr. Edwards.

Fourth Year. Ward and dispensary instruction is given in the University and Mercy Hospitals, where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope in the examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Dr. Blake. University Hospital—Drs. Reeder and Monte Edwards.

OTOLOGY

J. W. Downey, M.D.	Professor of Otology
Franklin B. Anderson, M.D.	Associate in Otology
F. A. Holden, M.D.	Instructor in Otology
Benjamin S. Rich, M.D.	Assistant in Otology
Birkhead Maccgowan, M.D.	Assistant in Otology
Thomas R. O'Rourk, M.D.	Assistant in Otology

The course in otology is planned to give a practical knowledge of the anatomy and physiology of the ear, and its proximity and relationship to the brain and other vital structures. The inflammatory diseases, their etiology, diagnosis, treatment and complications are particularly stressed, with emphasis upon their relationship to the diseases of children, head-surgery and neurology.

Third Year. The entire class is given instruction by means of talks, anatomical specimens and lantern slides.

Fourth Year. Small sections of the class receive instruction and make personal examinations of patients under the direction of an instructor. The student is urged to make a routine examination of the ear in his ward work in general medicine and surgery.

NEUROLOGICAL SURGERY

Charles Bagley, Jr., A.B., M.D.	Professor of Neurological Surgery
Richard G. Coblentz, A.B., M.D.	Associate in Neurological Surgery
William R. Geraghty, B.S., M.D.	Instructor in Neurological Surgery
James G. Arnold, Jr., A.B., M.D.	Hitchcock Fellow in Neurological Surgery

Third Year. The course covers instruction in diagnosis and treatment of surgical conditions of the brain, spinal cord, and the peripheral nerves. Ten lectures are given to the entire class. Dr. Bagley.

Fourth Year. Weekly ward rounds and conferences are given at the University Hospital. Drs. Bagley and Coblentz.

ONCOLOGY

J. Mason Hundley, Jr., M.A., M.D.	Professor of Gynecology
Grant E. Ward, A.B., M.D.	Associate in Surgery

Every facility for the diagnosis and treatment of neoplastic diseases is available; this includes electro-surgery, radium therapy and deep X-ray therapy.

An out-patient clinic is held twice weekly which affords an opportunity for instruction to a limited number of students. The gynecological problems are under the supervision of Dr. Hundley, and the general surgical conditions are under the direction of Dr. Ward.

Instruction, other than dispensary teaching, is given to small groups of students, for one hour a week, in the history, physics and practical application of radium. Drs. Ward and Hundley.

ORAL SURGERY

Robert P. Bay, M.D.	Professor of Oral Surgery
Brice M. Dorsey, D.D.S.	Professor of Exodontia
Charles A. Reifschneider, M.D.	Associate Professor of Surgery and Oral Surgery
William E. Hahn, D.D.S.	Instructor in Exodontia

This section in the Department of Surgery is established for the teaching of both medical and dental students. A new subdivision in the Dispensary has also been established, and beds will be provided in the University Hospital for the care of patients, who will be available for the teaching of students from both schools.

Senior year: clinics weekly.

Ward instruction and group teaching in dispensary. Instruction includes diagnosis and treatment of diseases of the face, mouth and jaws.

INDUSTRIAL MEDICINE AND SURGERY

Page Edmunds, M.D.	Professor of Traumatic Surgery
G. Carroll Lockard, M.D.	Professor of Clinical Medicine

This section is under the combined supervision of the Medical and Surgical Departments and is a cooperative effort by members of the Medical School and Hospital Staff to afford means for study, both clinical and laboratory, of the patient who has been subjected to industrial hazard, either traumatic or medical, so that adequate care may be instituted to promote his physical well-being. The entire resources of the Laboratories of the Medical School and Hospital are available as needed.

Under direction of this department limited undergraduate instruction will be given, especially in the methods of examination and of keeping records; and in the general medico-legal principles as they affect the industrial employee, the employer, the general insurers, the physician and the hospital. There will also be instruction upon methods of making life insurance and other physical examinations, whether for employment or for health purposes. The wards of the University, Mercy and City Hospitals will supply suitable material for bed-side instruction.

DEPARTMENT OF OBSTETRICS

J. M. H. Rowland, M.D., Sc.D., LL.D.	Professor of Obstetrics
L. H. Douglass, M.D.	Professor of Clinical Obstetrics
J. McFarland Bergland, M.D.	Associate Professor of Obstetrics
Emil Novak, M.D.	Associate Professor of Obstetrics
J. G. M. Reese, M.D.	Assistant Professor of Obstetrics
M. Alexander Novey, A.B., M.D.	Assistant Professor of Obstetrics
Isadore A. Siegel, A.B., M.D.	Associate in Obstetrics
E. P. H. Harrison, A.B., M.D.	Associate in Obstetrics
Margaret B. Ballard, M.D.	Assistant in Obstetrics
E. S. Edlavitch, M.D.	Assistant in Obstetrics
Kenneth B. Boyd, M.D.	Assistant in Obstetrics
Frank K. Morris, A.B., M.D.	Assistant in Obstetrics
Dudley P. Bowe, A.B., M.D.	Assistant in Obstetrics
John E. Savage, B.S., M.D.	Hitchcock Fellow and Assistant in Obstetrics
W. A. Deckert, M.D.	Assistant in Obstetrics
Jaroslav Hulla, B.S., M.D.	Assistant in Obstetrics
Marius P. Johnson, A.B., M.D.	Assistant in Obstetrics

Third Year. Two lectures and recitations are given each week to the entire class. Drs. Rowland, Douglass, Novak, Bergland, Siegel, Novey and Harrison.

Clinics, recitations and lectures are given to one-half of the class each week at the Baltimore City Hospitals and the University Hospital. Drs. Rowland, Reese and Novey.

Demonstrations at the University Hospital Dispensary are given to sections of the class. Drs. Siegel and Harrison.

Students observe and assist in deliveries at the University and Baltimore City Hospitals throughout the year.

Fourth Year. A clinical conference is given each week. Drs. Rowland, Douglass and Siegel.

Ward classes are given six hours per week, for five weeks, to sections of the class at the University Hospital. Drs. Douglass, Reese and Novey. Manikin work is given to sections of the class at the University Hospital. Drs. Morris, Bowe and Deckert.

Each member of the senior class is required to conduct the delivery of ten women in their homes under the supervision of the teaching and resident staff. Students observe, assist in and conduct, under supervision, deliveries at the University Hospital.

DEPARTMENT OF GYNECOLOGY

J. Mason Hundley, Jr., A.B., M.A., M.D.	Professor of Gynecology
Abram S. Samuels, M.D.	Clinical Professor of Gynecology
George A. Strauss, Jr., M.D.	Assistant Professor of Gynecology
R. G. Willse, M.D.	Assistant Professor of Gynecology
Thomas K. Galvin, M.D.	Assistant Professor of Gynecology
Leo Brady, A.B., M.D.	Assistant Professor of Gynecology
John T. Hibbitts, M.D.	Associate in Gynecology
Kenneth B. Boyd, M.D.	Associate in Gynecology
E. P. Smith, M.D.	Associate in Gynecology
Thomas S. Bowyer, M.D.	Instructor in Gynecology
Joseph V. Castagna, M.D.	Instructor in Gynecology
E. S. Edlavitch, A.B., M.D.	Instructor in Gynecology
Beverley C. Compton, A.B., M.D.	Assistant in Gynecology
W. Allen Deckert, A.B., M.D.	Assistant in Gynecology
Frank K. Morris, A.B., M.D.	Assistant in Gynecology
John C. Dumler, B.S., M.D.	Assistant in Gynecology

Third Year. A course of twenty-five lectures and recitations is given to the whole class. In addition, a short course of lecture-demonstrations is given at the Baltimore City Hospitals, consisting of eight periods of one hour each, in which small groups of students are instructed in the fundamentals of gynecological diagnosis and examination.

Fourth Year. Operative clinics—lectures and demonstrations—are given six hours per week, for five weeks, to sections of the class.

Instruction in Female Urology is given, and a small number of students may attend the cystoscopic dispensary which is held twice weekly.

The course in Gynecology also includes instruction in the diagnosis and treatment of cancer of the generative organs, small groups of students attending the Oncological dispensary for additional work.

DEPARTMENT OF OPHTHALMOLOGY

Clyde A. Clapp, M.D	Professor of Ophthalmology
M. Randolph Kahn, M.D	Clinical Professor of Ophthalmology
H. K. Fleck, M.D	Associate Professor of Ophthalmology
R. D. West, M.D	Associate in Ophthalmology
Henry F. Graff, A.B., M.D	Associate in Ophthalmology
Jonas Friedenwald, A.B., M.D	Lecturer in Ophthalmic Pathology
Joseph I. Kemler, M.D	Associate in Ophthalmology
F. A. Holden, M.D	Instructor in Ophthalmology
Frank A. Pacienza, M.D	Instructor in Refraction
John G. Runkle, M.D	Assistant in Ophthalmology
Thomas R. O'Rourk, M.D	Assistant in Ophthalmology
Jerome Snyder, M.D	Assistant in Ophthalmology

Third Year. Second semester. Dr. Kahn will give a course reviewing the anatomy and physiology of the eye and the methods used in making the various examinations. Errors of refraction and their effect upon the general system will be explained. Weekly section work, demonstrating the use of the ophthalmoscope, will be carried on during the entire session.

Fourth Year. Clinics and demonstrations in diseases of the eye, weekly, for one year. Dr. Clapp.

This course consists of lectures upon the diseases of the eye, with particular reference to their diagnosis and relation to general medicine. Special lectures will be given upon vascular changes in the eye and upon the pathology of the eye. Some operations will be demonstrated by motion pictures.

Weekly ward classes at the University, The Baltimore Eye, Ear and Throat and Mercy Hospitals during which the eye grounds in the various medical and surgical conditions are demonstrated. Drs. Fleck, West, Kemler and Graff.

Also daily demonstrations are given in the taking of histories and the diagnosis and treatment of the various conditions as seen in the dispensary.

Third Year—

Lectures	20 hours
Ophthalmoscopy	10 hours
Total	30 hours

Fourth Year—

Lectures and demonstrations	26 hours
Clinical work	20 hours
Total	46 hours

DEPARTMENT OF ART AS APPLIED TO MEDICINE

Carl Dame Clarke................Associate Professor of Art as Applied to Medicine

This department is maintained for the purpose of supplying pictorial and plastic illustrations for visual teaching in the classrooms of the University and for publication in scientific periodicals.

Special courses of instruction are given to qualified students.

HISTORY OF MEDICINE

John Rathbone Oliver, M.D., Ph.D............*Professor of the History of Medicine*

In this department, a series of lectures is given each year in March, April and May. The course is planned so that the entire field of Medical History may be covered in four years. Any medical student attending these lectures during his four years' course will be given, at least, an outline of the history of his profession.

During the past academic year, the lectures have been somewhat curtailed on account of the illness of the professor. One lecture was given by Dr. Owsei Temkin of the Institute of the History of Medicine at the Johns Hopkins University, who lectured on the Early History of Clinical Teaching. The other lectures dealt with the medicine of the 18th Century and the beginnings of American Medicine. One lecture was devoted to the outstanding figures of William and John Hunter and the connection of their dissecting room in Windmill Street, London, with the beginnings of American Medicine. Another lecture was devoted to Jenner and the history of inoculation; still another, to William Beaumont as an example of pioneer research in America.

In the coming year 1936–37, the lectures will deal with the beginnings of medicine, primitive medicine and the medicine of Babylonia, Egypt, India and Greece.

The Head of the Department is always glad to welcome any student who is interested in Medical History and will be glad to advise him as to his reading or to suggest subjects for special study.

FIRST YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 24, 1936 TO JANUARY 30, 1937

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 1.00	Gross Anatomy—Lectures and Laboratories					(9–12) Neuro-Anatomy *32–34 S. Paca St.*
1.00 to 2.00	Lunch					
2.00 to 5.00	Histology and Embryology *32–34 S. Paca St.*		Neuro-Anatomy *32–34 S. Paca St.*	Histology and Embryology *32–34 S. Paca St.*		

SECOND SEMESTER, FEBRUARY 1 TO MAY 29, 1937

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 10.00	Biological Chemistry *29*	Biological Chemistry *29*	Biological Chemistry *29*	(8.30–9.30) Physiology *C. H.*	(8.30–9.30) Physiology *C. H.*	(8.30–9.30) Physiology *C. H.*
10.00 to 11.00	Laboratory — Physiology *Sect. A* (10–4) — Biological Chemistry *Sect. B* (1–4)	Laboratory — Physiology *Sect. B* (10–4) — Biological Chemistry *Sect. A* (1–4)	Biological Chemistry *29*	(9.30–10.30) Biological Chemistry *29*	(9.30–10.30) Biological Chemistry *29*	
11.00 to 4.00			Laboratory — Physiology *Sect. A* (11–5) — Biological Chemistry *Sect. B* (1–4)	Laboratory — Physiology *Sect. B* (10.30–4.30) — Biological Chemistry *Sect. A* (1–4)	(10.30–11.30) Psychiatry *29*	
4.00 to 5.00						

Locations of Lecture Halls and Laboratories:

Adm. 1—First Floor, Administration Building, Lombard and Greene Streets.
A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Streets.
29 — 29 South Greene Street, First Floor.
Anatomy Laboratory—Third Floor, Gray Laboratory, Lombard and Greene Streets.
Biological Chemistry Laboratory—Third Floor, 31 South Greene Street.
Histology and Embryology Laboratory—32-34 South Paca Street, Sixth Floor.
Neuro-Anatomy Laboratory—32-34 South Paca Street, Sixth Floor.

Mid-Year Examinations—January 25–30, 1937
Final Examinations—May 24–29, 1937
(This schedule is subject to revision for 1936–1937)

SECOND YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 24, 1936 TO JANUARY 30, 1937

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 12.00	*Neuro-Anatomy	Neuro-Anatomy	(9–10) Medicine *Amp.*	Neuro-Anatomy	Pharmacology Laboratory *Sect. B*	
12.00 to 12.30	Lunch	Lunch	(10–1) Pharmacology Laboratory *Sect. A*	Lunch	Lunch	
12.30 to 2.30	†Bacteriology Laboratory	Bacteriology Laboratory	(1–1.30) Lunch	Bacteriology Laboratory	(12.30–1.30) Bacteriology *C. H.* (1.30–2.30) Psychiatry *C. H.*	
2.30 to 3.30	Pharmacology *C. H.*	Pharmacology *C. H.*	(1.30–3.30) Bacteriology Laboratory	Methods of Neurological Examination *C. H.*		

* Neuro-anatomy course ends November 25, 1936. Examination date to be announced.

† Bacteriology Laboratory—Section work during the last month.

SECOND SEMESTER, FEBRUARY 1 TO MAY 29, 1937

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	Surgery *Adm. 1*	Surgery *Adm. 1*	Surgical Anatomy *Adm. 1*	Physiology *C. H.*	Physiology *C. H.*	Physiology *C. H.*
9.30 to 10.30	Pharmacology *Adm. 1*	Pharmacology *Adm. 1*	Surgical Anatomy Laboratory	(10–11) Medical Clinic *Amp.*	Physiology Laboratory — (*Demonstrations*)	(9.30–5.00) Physiology Laboratory (*Sections*)
10.30 to 11.30	Pathology *A. H.*	Pathology *A. H.*				
11.30 to 12.00	Lunch	Lunch	Lunch	Lunch	Lunch	
12.00 to 1.00	Pathology Laboratory	Pathology Laboratory	Pathology *A. H.*	Pathology Laboratory	Pathology Laboratory	
1.00 to 2.00			Pathology *A. H.*			
2.00 to 3.00	Surgical Anatomy *Adm. 1*	‖ Immunology Laboratory	Immunology Laboratory	Pharmacology Laboratory *Sect. A*	Pharmacology Laboratory *Sect. B*	
3.00 to 5.00	Surgical Anatomy Laboratory			Physical Diagnosis *Sect. B* (3.00–5.30)	Physical Diagnosis *Sect. A* (3.00–5.30)	

‖ Immunology Laboratory—Section work during last two months.

Locations of Lecture Halls and Laboratories:

Adm. 1—First Floor, Administration Building, Lombard and Greene Streets.
A. H.—Anatomical Hall—Upper Hall, N. E. Cor. Lombard and Greene Streets.
C. H.—Chemical Hall, Lower Hall, Lombard and Greene Streets.
Amp.—Wilson Memorial Amphitheatre, New University Hospital, Greene and Redwood Streets, Eighth Floor.

Laboratories:

Bacteriology—Second Floor, 31 South Greene Street.
Immunology—Second Floor, 31 South Greene Street.
Neuro-Anatomy—32-34 South Paca Street.
Pathology—Second Floor, 31 South Greene Street.
Pharmacology—Second Floor, Gray Laboratory, Lombard and Greene Streets.
Physiology—First Floor, Gray Laboratory, Lombard and Greene Streets.
Surgical Anatomy—Third Floor, Gray Laboratory, Lombard and Greene Streets.

Mid-Year Examinations—January 25–30, 1937
Final Examinations—May 24–29, 1937
(This schedule is subject to revision for 1936–1937)

THIRD YEAR SCHEDULE

SEPTEMBER 24, 1936 TO MAY 29, 1937

SCHEDULE 1

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	(Wholt Class) Obstetrics *C. H.*	(Whole Class) Surgery *C. H.*	(Whole Class) Obstetrics *C. H.*	(Whole Class) Surgery **C. H. †Adm. 1*	(Whole Class) Pathology **C. H. †Adm. 1*	(Whole Class) Surgery **C. H. †Adm. 1*
9.30 to 10.00	Transfer to Baltimore City Hospitals					
10.00 to 12.00	Physical Diagnosis, Pathology and Pediatrics at B. C. H.					
12.00 to 1.00	Transfer and Lunch	Transfer and Lunch	Lunch	Transfer and Lunch	Lunch	
1.00 to 2.00	(Whole Class) Nose & Throat, Otology, Proctology, Urology *C. H.*	(Whole Class) *Gynecology †Eye—10 wks. (Feb. 5 to April 9) †Oncology —5 wks. (April 16 to May 14) *C. H.*	Medical Clinic *B. C. H.*	(Whole Class) Clinical Pathology *C. H.*	Obstetrical Clinic *B. C. H.*	
2.00 to 4.00	(Whole Class) Pathology Laboratory *31*		Surgery (2.00 to 4.00) — Neurology (2.00 to 4.30) — Gynecology Orthopaedics Psychiatry (Subgroups of Surgery Group) (4.00 to 5.00)	(Whole Class) Clinical Pathology — Laboratory *31*	Surgery (2.00 to 4.00) — Neurology (2.00 to 4.30) — Gynecology Orthopaedics Psychiatry (Subgroups of Surgery Group) (4.00 to 5.00)	
4.00 to 5.00	(Whole Class) Preventive Medicine *C. H.*	(Whole Class) Physical Diagnosis, Psychiatry, Legal Medicine *C. H.*				

* First Semester. † Second Semester.

SCHEDULE 2

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30 to 9.30	Same as Schedule 1					
9.30 to 10.20	Pediatrics *C. H.*	Medicine *C. H.*	Medicine *C. H.*	Therapeutics *C. H.*	Medicine *C. H.*	Neurology *C. H.*
10.30 to 12.30	Operative Surgery—29 South Greene Street Medical and Surgical Dispensaries—(Univ. and Mercy Sections)					
12.30 to 1.00	Lunch	Lunch	Lunch	Lunch	Lunch	
1.00 to 2.00	Same as Schedule 1		Medical Clinic *Amp.*	Same as Schedule 1	Psychiatry (9 weeks) Dermatology (6 weeks) N.B.—The whole section reports to psychiatry for first three weeks, then subdivides. *Adm. 1* for first 3 wks. U. H. Disp.	
2.00 to 4.00			Ophthalmoscopy (5 weeks) *B. E. H.* — Obstetrics (5 weeks) Univ. Hosp. — Otology (5 wks.) Univ. Hosp.			
4.00 to 5.00					Obstetrics *C. H.*	

The Junior Class will be divided into two sections—A and B. Each section reports to classes in keeping with the following schedule assignment, in which the letters represent the class sections and the numerals indicate the schedules to be followed for the 15-week periods shown.

Schedule Assignment

Periods	*Sections and Schedules*
September 24 to January 23	A-1, B-2
February 1 to May 15	B-1, A-2

Locations of Lecture Halls, etc.-

Adm. 1—Administration Bldg., Lombard and Greene.
Amp.—Wilson Memorial Amphitheatre, New University Hospital, Eighth Floor.
B. C. H.—Baltimore City Hosps., 4940 Eastern Ave.
B. E. H.—Baltimore Eye, Ear and Throat Hospital, 1214 Eutaw Place.
C. H.—Chemical Hall, Lower Hall, N. E. Cor. Lombard and Greene Sts.
Univ. Hosp.—New University Hospital, Greene and Redwood Streets.
U. H. Disp.—Old Hospital Building, S. W. Cor. Lombard and Greene Streets.
31—31 South Greene Street.
Clinical Pathology Laboratory—31 South Greene St., Second Floor.
Pathology Laboratory—31 South Greene Street, Special Rooms, Basement.

Mid-Year Examinations—January 25–30, 1937
Final Examinations—May 17–29, 1937
(This schedule is subject to revision for 1936–1937)

FOURTH YEAR SCHEDULE

SEPTEMBER 24, 1936 TO MAY 29, 1937

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9.00 to 11.00	Ward Classes — (a) Medicine (a) Surgery (b) Obstetrics (d) Pediatrics	Ward Classes — (a) Medicine (a) Surgery (b) Gynecology (c) Gynecology	Ward Classes — (a) Medicine (a) Surgery (b) Obstetrics (d) Pediatrics	Ward Classes — (a) Medicine (a) Surgery (b) Gynecology (c) Gynecology	Ward Classes — (a) Medicine (a) Surgery (b) Obstetrics (d) Pediatrics	Ward Classes — (a) Medicine (a) Surgery (b) Gynecology (d) Pediatrics
11.00 to 12.00	Orthopaedic Surgery *Univ. Sec. Amp.* *P. & S. Sec. 51*	Medical Clinic *Univ. Sec. Amp.* Surgical Pathology *P. & S. Sec. 40*	Clinical Pathological Conference *Univ. Sec. C. H.* *P. & S. Sec. 34*	Surgical Clinic *Univ. Sec. Amp* *P. & S. Sec. 51*	Medical Clinic *Univ. Sec. Amp.* *P. & S. Sec. 34*	Pediatric Clinic *Univ. Sec. Amp.* *P. & S. Sec. 34*
12.00 to 2.00	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary and Lunch	Dispensary Lunch and Transfer	Dispensary
2.15 to 3.15	Dermatology Clinic (Full Class at Univ. Hosp.) *Amp.*	Neurology Clinic *Univ. Sec. Amp.* *P. & S. Sec. 34*	Eye and Ear Clinic (Full Class at Univ. Hosp.) *Amp. & C. H.*	Obstetrical Clinic (Full Class at Univ. Hosp.) *Amp.*	Gastro-Enterology Clinic (Full Class at Univ. Hosp.) *Amp.*	
3.30 to 5.00	*P. & S. Sect.* Ward Classes Medicine Eye and Ear	*P. & S. Sect.* Ward Classes Medicine Orthopaedics	*P. & S. Sect.* Ward Classes Medicine Nose and Throat Preventive Medicine	*P. & S. Sect.* Ward Classes Medicine Proctology Pediatrics	*P. & S. Sect.* Ward Classes Neurology Roentgenology Psychiatry	
3.30 to 5.00	*Univ. Sect.* Ward Classes Medicine Roentgenology Neurological Surgery	*Univ. Sect.* Ward Classes Therapeutics Proctology Oncology (3.30–4.30) *Amp.*	*Univ. Sect.* Ward Classes Medicine Urology Eye and Ear	*Univ. Sect.* Ward Classes Medicine Nose and Throat Physical Therapeutics	*Univ. Sect.* Ward Classes Neurology Psychiatry Orthopaedic Surgery (*Kernan Hospital*)	
5.00 to 6.00				*History of Medicine *C. H.*		

(a)—Univ. and P. & S. Sections.
(b)—Univ. Section.
(c)—Whole P. & S. special group.
(d)—P. & S. special group, divided attendance at Univ. and P. & S.
* March, April and May, 5–6 p.m.

The Senior Class is divided into two sections, which report, one at Lombard and Greene Streets, the other at Calvert and Saratoga Streets, for one semester each, then rotate.

Each section of the class is divided into three groups—Medical, Surgical, and Special. These groups will rotate on the following dates:

First Semester		*Second Semester*	
1st period	Sept. 24–Oct. 31	1st period	Feb. 1–Mar. 6
2nd period	Nov. 2–Dec. 5	2nd period	Mar. 8–Apr. 10
3rd period	Dec. 7–Jan. 23	3rd period	Apr. 12–May 15

C. H.—Chemical Hall—N. E. Cor. Lombard and Greene Streets.
Amp.—Wilson Memorial Amphitheatre—New University Hospital.
P. & S., 34—Second Floor, Calvert and Saratoga Streets.
P. & S., 40, 51—Fourth Floor, Calvert and Saratoga Streets.

For sub-sections of P. & S. ward classes, 3.30 to 5.00 p. m., see supplementary schedule at Mercy Hospital. For sub-sections of U. H. ward classes, 3.30 to 5.00 p. m., see Medical School Bulletin Board.

Mid-Year Examinations—January 25–30, 1937
Final Examinations—May 17–22, 1937
(This schedule is subject to revision for 1936–1937)

ANNOUNCEMENT OF CHANGES IN THE REQUIREMENTS FOR MATRICULATION

Beginning with the session of 1937–1938, and until further notice, the minimum requirements for matriculation in the School of Medicine will be:

(a) Graduation from an approved secondary school, or the equivalent in entrance examinations, and

(b) Three years of acceptable premedical credit earned in an approved college of arts and sciences. The quantity and quality of this preprofessional course of study shall be not less than that required for recommendation by the institution where the premedical courses are being studied.

The premedical curriculum shall include one-year courses, or their equivalents, in English, biology, inorganic chemistry, organic chemistry, physics, and French or German, and such elective courses as will complete a balanced three-year schedule of study.

The elective group should include a second course in English, scientific French or German (a reading knowledge of either language is desirable, although German is preferred), comparative vertebrate anatomy, embryology, histological technique, quantitative analysis, physical chemistry, economics, history, mathematics, political science, psychology, sociology, etc.

Thirty semester hours in the non-science courses (i.e., exclusive of biology, chemistry, physics, and mathematics) will make a balanced curriculum in the three-year schedule of study.

Wherever possible, a premedical student should complete a four-year curriculum and earn the baccalaureate degree.

In selecting candidates for admission, preference will be given to those applicants who have satisfactory high school and college records (including the ratio of science and non-science courses); acceptable scores in the Moss Aptitude Test (which is given each fall by the Association of American Medical Colleges in the institutions that are preparing students for medicine); the most favorable letters of recommendation from their respective premedical committees, or from one instructor in each of the departments of biology, chemistry, and physics; and who in all other respects give the most promise of becoming successful students and physicians of high standing.

Applications for admission to the 1937–1938 class will be received beginning October 1, 1936. They will be considered in the order of their reception.

COMBINED COURSE IN ARTS AND SCIENCES, AND MEDICINE

A combined seven years' curriculum leading to the degrees of Bachelor of Science and Doctor of Medicine is offered by the University of Maryland. The first three years are taken in residence in the College of Arts and Sciences at College Park, and the last four years in the School of Medicine in Baltimore. (See University catalogue for details of quantitative and qualitative premedical course requirements.)

Upon the successful completion of the first year in the School of Medicine, and upon the recommendation of the Dean, the degree of Bachelor of Science may be conferred by the College of Arts and Sciences.

Students are urged to consider carefully the advantages this combination course offers over the minimum requirements of two years. By completing three years the training may be gradually broadened by a wider latitude in the election of courses in the arts subjects.

POST-GRADUATE STUDENTS

Graduates in medicine desiring to take the work of the senior year without being candidates for the degree, and, therefore, without examination, may receive a certificate of attendance on completing the full course satisfactorily.

RULES

1. All students are required to take the spring examinations unless excused by the Dean. No student will be permitted to advance from a lower to a higher class with conditions.

2. Should a student be required to repeat any year in the course, he must pay regular fees.

3. A student failing in final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and to take examinations in such other branches as may be required, should he again be permitted to enter the school as a candidate for graduation.

4. The general fitness of a candidate for graduation, as well as the results of his examinations, will be taken into consideration by the Faculty.

5. All students are required to provide themselves with microscopes of a satisfactory type.

A standard microscope of either Bausch & Lomb, Leitz, Spencer, or Zeiss make, fitted with the following attachments, will fill the requirements:

Triple nose piece:	10 x and 5 x Oculars
Wide aperture stage:	16 mm. and 4 mm. Objectives
Quick Screw condenser (Abbe):	1.9 mm. 125 N.A. Oil Immersion Lens

All used microscopes are subject to inspection and approval before their use in the laboratory is permitted. The student is cautioned against the purchase of such an instrument before its official approval by the school.

STUDENTS MUST BE PREPARED TO PURCHASE MICROSCOPES AT THE BEGINNING OF THE FIRST YEAR

All the above rules, as well as the fees stated below, relate to the year ending June 5th, 1937 only. The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the University authorities deem it expedient.

FEES

Matriculation fee (paid once)	$10.00
Tuition fee (each year) for residents of Maryland	400.00
Tuition fee (each year) for non-residents	600.00
Laboratory fee (each year)	25.00
Special and re-examination fee	5.00
Graduation fee	15.00

No fees are returnable.

The above fees apply to all students who matriculate in the School of Medicine in any class for the session beginning September 24, 1936.

All students, after proper certification, are required to register at the Office of the Registrar. (See calendar in front part of this bulletin for dates for the payments of fees, and the note regarding late registration fee.)

The matriculation fee is payable at the time the applicant is offered acceptance as a student.

The laboratory fee and one-half of the tuition fee for the year shall be paid at the time of the first semester registration, and the remainder of the tuition fee shall be paid at the second semester registration date.

Failure to meet these conditions will debar automatically the student from attendance on classes and other privileges of the University.

When offering checks in payment of tuition and other fees, students are requested to have them drawn in the exact amount of such fees. Personal checks whose face value is in excess of the fees due will be accepted only for collection.

DEFINITION OF RESIDENCE STATUS OF STUDENTS*

Students who are minors are considered to be resident students if, at the time of their registration, the parents* have been residents of this State for at least one year.

Adult students are considered to be resident students if, at the time of their registration, they have been residents of this State for at least one year, provided such residence has not been acquired while attending any school or college in Maryland.

The status of the residence of a student is determined at the time of his first registration in the University and may not thereafter be changed by him unless, in the case of a minor, his parents* move to and become legal residents of this State by maintaining such residence for at least one full calendar year. However, the right of the student (minor) to change from a non-resident to a resident status must be established by him prior to registration for a semester in any academic year.

STATE MEDICAL STUDENT QUALIFYING CERTIFICATES

Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York, should apply to their respective state boards of education for medical student qualifying certificates (Pennsylvania and New Jersey) or approval of applications for medical student qualifying certificates (New York).

Those students who are accepted here must file their state certificates in the Office of the Director of Admissions, University of Maryland, during the period of attendance in the School of Medicine.

MEDICAL CARE OF STUDENTS

The Medical Council has made provision for the systematic care of students in the Medical School, according to the following plan:

1. *Preliminary Examination*—All new students will be examined during the first week of the semester. Notice of the date, time, and place of the examination will be announced to the classes and on the bulletin board. The passing of this physical examination is necessary before final acceptance of any student.

2. *Medical Attention*—Students in need of medical attention will be seen by the School Physician, Dr. T. N. Carey, in his office at the Medical

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* The term "parents" includes persons who, by reason of death or other unusual circumstances, have been legally constituted the guardians of or stand in loco parentis to such minor students.

School, between 4 and 5 P.M., daily, except Saturday and Sunday. In cases of necessity, students will be seen at their homes.

3. *Hospitalization*—If it becomes necessary for any student to enter the hospital during the school year, the Medical Council has arranged for the payment of part or all of his hospital expenses, depending on the length of his stay and special expenses incurred. This applies only to students admitted through the School Physician's Office.

4. Prospective students are advised to have any known physical defects corrected before entering school in order to prevent loss of time which later correction might incur. As minor visual defects are frequently unrecognized until detected by an ophthalmologist, it is especially urged that all new students have their eyes examined and any error of refraction corrected before beginning the course.

PRIZES AND SCHOLARSHIPS

FACULTY PRIZE

The Faculty each year awards a Gold Medal to the Graduate who during the four years of his course has shown the greatest proficiency in preparing for the practice of medicine. The five candidates standing next in order will be awarded Certificates of Honor.

DR. A. BRADLEY GAITHER MEMORIAL PRIZE

A prize of $25.00 is given each year by Mrs. A. Bradley Gaither as a memorial to the late Dr. A. Bradley Gaither, to the student in the senior class doing the best work in Genito-Urinary Surgery.

SCHOLARSHIPS*

The Dr. Samuel Leon Frank Scholarship

(Value $125.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this University.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Medical Council "to a medical student of the University of Maryland, who in the judgment of said Council, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student who has successfully completed one year's work in this school. No student may hold such scholarship for more than two years.

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* Note: Scholarships, unless specifically renewed on consideration of application, are for one year only.

The Charles M. Hitchcock Scholarships

(Value $125.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the University.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Medical Council, to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Council satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

The Randolph Winslow Scholarship

(Value $125.00)

This scholarship was established by Prof. Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Medical Council, to a "needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Medical Council that he is worthy of and in need of assistance."

Dr. Leo Karlinsky Memorial Scholarship

(Value $200.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of the University.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon the nomination of the Medical Council, to "a needy student of the Senior, Junior or Sophomore Class of the Medical School."

He must have maintained in all his work up to the time of awarding the scholarship a satisfactory grade of scholarship.

He must be a person of good character and must satisfy the Medical Council that he is worthy of and in need of assistance.

The University Scholarships

Two scholarships are awarded by the University: One to a student of the College of Arts and Sciences appointed by the President, to be held for only one year; the other, which entitles the holder to exemption from payment of the tuition fee of the year, is awarded annually by the Medical Council to a student of the senior class who presents to the Medical Council satisfactory evidence that he is of good moral character and is worthy of and in need of assistance to complete the course.

Frederica Gehrmann Scholarship

(Not open to holders of Warfield and Cohen Scholarships)

This scholarship was established by the bequest of the late Mrs. Frederica Gehrmann and entitles the holder to exemption from payment of tuition fees. The scholarship is awarded to a third-year student who at the end of the second year has passed the best practical examinations in Physiology, Pharmacology, Pathology, Bacteriology, Immunology, Serology, Surgical Anatomy and Neuro-Anatomy.

The Clarence and Genevra Warfield Scholarships

(Value $300.00 each)

There are five scholarships established by the Regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships are available to students of any of the classes of the course in medicine. Preference is given to students from the counties of the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must agree, after graduation and a year's interneship, to undertake the practice of medicine, for a term of two years, in the county to which the student is accredited, or in a county selected by the Council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Council, the money advanced by the Regents shall be refunded by the student.

Israel and Cecilia E. Cohen Scholarship

(Value $250.00)

This scholarship was established by Miss Eleanor S. Cohen in memory of her parents, Israel and Cecelia E. Cohen. Terms and conditions: This scholarship will be available to students of any one of the classes of the course in Medicine; preference is given to students of the counties in the State of Maryland which the Medical Council may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's interneship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the Council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Council, the money advanced by the Regents shall be refunded.

ANNUAL HOSPITAL APPOINTMENTS

Each session the following annual appointments are made from among the graduates of the school:

TO THE UNIVERSITY HOSPITAL

Two Residents in Surgery
Two Residents in Medicine
Three Residents in Obstetrics
Two Residents in Gynecology
Resident in Pediatrics
Resident in Nose and Throat
Resident in Roentgenology
Thirteen Senior Internes rotating in Medicine and Surgery
Twelve Junior Internes rotating in the Specialties

TO THE MERCY HOSPITAL

Chief Resident Physician
Two Residents in Medicine
Four Residents in Surgery
Resident in Gynecology
Resident in Nose and Throat
Resident in Pathology
Nine Internes on a Rotating Service

NOTICE TO STUDENTS

The personal expenses of the students are at least as low in Baltimore as in any large city in the United States. The following estimates of a student's personal expenses for the academic year of eight months have been prepared by students, and are based upon actual experience. *In addition to these the student must bear in mind the expenditure for a microscope.*

Items	*Low*	*Average*	*Liberal*
Books	$50	$75	$100
College Incidentals	20	20	20
Board, eight months	200	250	275
Room rent	64	80	100
Clothing and laundry	50	80	150
All other expenses	25	50	75
Total	$409	$556	$720

Students will save time and expense upon their arrival in the city by going directly to the School of Medicine on the University grounds, N. E. Corner Lombard and Greene Streets. Here may be found a list of comfortable and convenient boarding houses suitable to their means and wishes.

For further information, apply to

J. M. H. Rowland, *Dean*,
Lombard and Greene Streets.

GRADUATES, UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS, JUNE 6, 1936

Batalion, Abraham Louis	Maryland
Beers, Reid Lafeal, A.B	Utah
Bernstein, Milton, A.B	Maryland
Bieren, Roland Essig	Maryland
Booth, Harold Thomas, A.B	New York
Bowie, Harry Clay, B. S	Maryland
Bunn, James Harry, Jr., B.S	North Carolina
Burka, Irving, B.S	District of Columbia
Burns, Harold Hubert	Pennsylvania
Burton, Jerome Kermit	Maryland
Bush, Joseph Edgar, A.B	Maryland
Chesson, Andrew Long	North Carolina
Coplin, George Joseph, B.S	New Jersey
Ctibor, Vladimir Frantisek, A.B.	New Jersey
Curtis, Leo Michael	Maryland
Davidson, Nachman, A.B	Maryland
Davis, George Howey, B. S	Maryland
Deehl, Seymour Ralph, B.S	New Jersey
Dittmar, Stuart Watt	Pennsylvania
Dixon, Darius McClelland, B.S	Maryland
Drozd, Joseph	Maryland
Feldman, Jerome	Maryland
Fissel, John Edward, Jr., B.S	Maryland
Fox, Lester Mitchell	Maryland
Franklin, Philip Lair	Maryland
Frich, Michael Garland	Pennsylvania
Gillis, Marion Howard, Jr	Maryland
Gimbel, Harry Solomon, A.B	Maryland
Glassner, Frank	Maryland
Gordner, Jesse Walter, Jr., B.S	Pennsylvania
Greengold, David Bernard, A.B	Maryland
Gregory, Philip Orson	Maine
Greifinger, William, A.B	New Jersey
Grollman, Jaye Jacob	Maryland
Isaacs, Benjamin Herbert, A.B	Maryland
Jones, Ceirianog Henry	Pennsylvania
Jones, Emory Ellsworth, Jr	West Virginia
Karfgin, Walter Esselman, B.S	Maryland
Karpel, Saul, B.S	New York
Katz, Joseph	Maryland
Kleiman, Norman, A.B	Maryland
Knobloch, Howard Thomas, B.S	Pennsylvania
Kolodner, Louis Joseph	Maryland
Kroll, Louis Joseph, A.B	Maryland
Lipin, Raymond Joseph	Maryland
Lowman, Robert Morris	Maryland
Lund, Grant	Utah
Mansfield, William Kenneth	Pennsylvania
Maser, Louis Robert	Maryland
McCauley, Arthur Franklin, B.S.	Maryland
McKnew, Hector Caldwell, Jr	Maryland
McNinch, Eugene Robinson, B.S.	Pennsylvania
Moran, James Blessing, Ph.B.	Rhode Island
Moran, James Patrick, B.S	New York
Moses, Benjamin Bernard	Maryland
Myerovitz, Joseph Robert	Maryland
Myers, William, B.S	Pennsylvania
Nester, Hansford Dorsey, A.B., B.S.	West Virginia
Nestor, Thomas Agnew, Ph.B.	Rhode Island
Nicholson, Morris John, B.S	Maryland
Nowak, Sigmund Roman, B.S	Maryland
O'Brien, William Aloysius, Jr., A.B.	New Jersey
Parr, William Andrew	Maryland
Pembroke, Richard Heber, Jr., A.B.	Maryland
Pentecoste, Salvador Dante, B.S.	New Jersey
Pigman, Carl, B.S	Kentucky
Reichel, Samuel Marvin, A.B	Maryland
Reynolds, John Henry, Jr	Pennsylvania
Rochlin, Gregory Narcisse	Maryland
Roseman, Ralph Bernard, A.B.	Pennsylvania
Rosenthal, Victor, B.S	New York
Royster, James Dan, B.S	North Carolina
Schmieler, George Peter, B.S.	Pennsylvania
Selby, George Durward, A.B	Maryland
Shimanek, Lawrence Joseph	Maryland
Smith, William Carey	North Carolina
Solomon, Cyril	Maryland
Sorin, Matthew	New Jersey
Spain, David Michael	New York
Squires, Millard Fillmore, Jr	Maryland
Stapen, Milton Honore, B.S	New York
Steinberg, Samuel	Maryland
Stern, Morris Harold, B.S	New Jersey
Sunday, Stuart Dos Passos, A.B.	Maryland
Terr, Isaac, B.S	New York
Thomas, Anthony Joseph, Ph.B.	Massachusetts
Tierney, Lawrence Matthew	Connecticut
Troutman, Baxter Suttles, B.S.	North Carolina
Waller, William Kennedy, A.B	Maryland
Wehner, Daniel George	Maryland
Weinstein, Jack Joseph	Maryland
Wells, Gibson Jackson, A.B	Maryland
Wilfson, Daniel, Jr., A.B	Maryland
Wilkinson, Arthur Gilbart, A.B.	Connecticut
Wolf, Nathan	Maryland
Yavelow, Charles Sidney, A.B	New York
Zimring, Joseph George, B.S	New York

Honors

University Prize Gold Medal.................................George Howey Davis

Certificates of Honor

Louis Joseph Kroll
Harry Clay Bowie
Howard Thomas Knobloch
John Henry Reynolds, Jr.
Gibson Jackson Wells

Prize

The Doctor A. Bradley Gaither Memorial Prize of $25.00 for the best work in genito-urinary surgery during the senior year..................George Durward Selby

INTERNESHIPS—CLASS OF 1935

Adelman, Milton Harris	Hospital for Joint Diseases, N. Y. City
Albrittain, John Warren	University Hospital, Balto., Md.
Alessi, Edward James	West Balto. Gen. Hosp., Balto., Md.
Alonso, Miguel	South Balto. Gen. Hosp., Balto., Md.
Alpert, George	Ball Memorial Hospital, Muncie, Ind.
Anderson, John Bascom	City Memorial Hosp., Winston-Salem, N. C.
Aungst, Melvin Rauch	Church Home & Infirmary, Balto., Md.
Barnes, Henry Eugene, Jr	City Memorial Hosp., Winston-Salem, N. C.
Battaglia, Dominic Thomas	Franklin Square Hosp., Balto., Md.
Bierer, Dan George	Columbia Hospital, Pittsburgh, Pa.
Bock, Charles Aloysius	Allegheny General Hosp., Pittsburgh, Pa.
Brouillet, George Hector	St. Joseph's Hospital, Balto., Md.
Bunn, James Pettigrew, Jr	University Hospital, Balto., Md.
Cassidy, William Adrian	Balto. City Hosp., Balto., Md.
Cornbrooks, Ernest Ivon, Jr	University Hospital, Balto., Md.
Cotter, Edward Francis	University Hospital, Balto., Md.
Cutler, Frank Henry	Mercy Hospital, Balto., Md.
Dickey, Francis George	University Hospital, Balto., Md.
Diehl, Earl Henry	Church Home & Infirmary, Balto., Md.
Dodge, Douglas Rude	Pasadena Hospital, Pasadena, Cal.
Doerner, Alexander Andrew	Metropolitan Hospital, Welfare Island, N. Y.
Du Bois, Robert Lionel	St. Mary's Hospital, Waterbury, Conn.
Dunnigan, William Charles	Mercy Hospital, Balto., Md.
Einhorn, Samuel Edward	Cumberland Hospital, Brooklyn, N. Y.
Ewald, August Ludwig	Maryland General Hospital, Balto., Md.
Fader, Ferdinand	West Balto. Gen. Hosp., Balto., Md.
Freeman, Irving	University Hospital, Balto., Md.
Fruchtbaum, Robert Pearson	Elizabeth General Hosp., Elizabeth, N. J.
Galitz, Philip Jacob	Wyckoff Heights Hosp., Brooklyn, N. Y.
Gerwig, Walter Henry, Jr	University Hospital, Balto., Md.
Godbey, John Randolph	University Hospital, Balto., Md.
Grenzer, William Howard	Mercy Hospital, Balto., Md.
Gross, Joseph Bernard	Sinai Hospital, Balto., Md.
Hammill, Gerard Paul	Mercy Hospital, Pittsburgh, Pa.

Hamrick, John Carl	University Hospital, Balto., Md.
Harris, Aaron	Sydenham Hospital, Balto., Md.
Hartman, Ira Frank	Balto. City Hospital, Balto., Md.
Heghinian, Jeannette Rosaline E.	Methodist Episcopal Hospital, Phila., Pa.
Helfrich, Wm. Goldsborough	University Hospital, Balto., Md.
Herald, James Kennedy	Youngstown Hospital, Youngstown, Ohio
Herrold, Lewis Charles	York Hospital, York, Pa.
Hollander, Arthur	Bronx Hospital, Bronx, N. Y.
Hugg, John Henry	St. Margaret's Memorial Hosp., Pittsburgh, Pa.
Hunt, Josiah Arnold	Maryland General Hospital, Balto., Md.
Jordan, Wm. Pritchard	Letterman Gen. Hosp., San Francisco, Cal.
Kaminsky, Aaron Louis	
Kane, Harry Francis	Mercy Hospital, Balto., Md.
Keller, Michael Lawrence	St. Joseph's Hospital, Paterson, N. J.
Klein, Harold Henry	Sinai Hospital, Balto., Md.
Klompus, Irving	Irvington Gen. Hosp., Irvington, N. J.
Knowles, Frederick Edwin, Jr.	Mercy Hospital, Balto., Md.
Laino, Frank Armento	Rockaway Beach Hospital, Rockaway Beach, N. Y.
Lane, Edwin Charles	Elizabeth Gen. Hosp., Elizabeth, N. J.
Layton, Caleb Rodney	Mercy Hospital, Balto., Md.
Lewis, Archie Clifton	Charleston Gen. Hosp., Charleston, W. Va.
Lichtenberg, Walter	Balto. City Hospital, Balto., Md.
Lieb, Saul	Newark Memorial Hosp., Newark, N. J.
Llewelyn, Louis Grandin	St. Agnes Hospital, Balto., Md.
MacLaughlin, Donald Clay	Bon Secour Hosp., Balto., Md.
Marek, Charles Bernard	St. Agnes Hospital, Balto., Md.
Mays, Howard Brooks	University Hospital, Balto., Md.
McDonough, Oscar Tracy, Jr.	Washington Hospital, Washington, Pa.
McGregor, Alpine Watson	California Hospital, Los Angeles, Cal.
McGregor, Lorenzo Watson	California Hospital, Los Angeles, Cal.
McHenry, DeArmond John	York Hospital, York, Pa.
Mech, Karl Frederick	St. Agnes Hospital, Balto., Md.
Mills, Lawrence Hoy	Mercy Hospital, Balto., Md.
Montgomery, Bruce	McKeesport Hosp., McKeesport, Pa.
Noon, Milton Alexander	Uniontown Hospital, Uniontown, Pa.
Owen, Philip	Jersey City Medical Center, Jersey City, N. J.
Pepe, Anthony James	St. Vincent's Hosp., Bridgeport, Conn.
Raffel, William	Sinai Hosp., Balto., Md.
Reier, Charles Henry	University Hospital, Balto., Md.
Roberts, David P.	Sinai Hospital, Balto., Md.
Robinson, Harry Maximilian, Jr.	University Hospital, Balto., Md.
Robinson, Milton	Coney Island Hospital, Brooklyn, N. Y.
Rogers, Frank Tipton	Maryland General Hospital, Balto., Md.
Rosen, Israel	West Balto. Gen. Hosp., Balto., Md.
Rosen, Sol	Eastern Dispensary & Casualty Hosp., Wash., D. C.
Rosenberg, Harold Wm.	Harlem Hospital, N. Y. City
Russell, John Carroll	Uniontown Hospital, Uniontown, Pa.
Schlachman, Milton	Metropolitan Hospital, Welfare Island, N. Y.
Schmitt, George Fredrick, Jr.	University Hospital, Balto., Md.
Schonfeld, Paul	University Hospital, Balto., Md.

Shapiro, Joseph	Rockaway Beach Hosp., Rockaway Beach, N. Y.
Shapiro, Sydney Harold	Jewish Memorial Hosp., N. Y. City
Shaul, John Melvin	University Hosp., Albany Medical School, Albany, N. Y.
Siscovick, Milton	Balto. City Hosp., Balto., Md.
Skeen, Leo Brown	Watts Hosp., Durham, N. C.
Spitznagle, Vernon Edward	Maryland Gen. Hosp., Balto., Md.
Stein, Benjamin Maxwell	Jamaica Hosp., Jamaica, N. Y.
Teitel, Louis	Gouverneur Hospital, N. Y. City
Teitelbaum, Harry Allen	Fellowship—University of Maryland School of Medicine
Tuby, Joseph	King's County Hosp., Brooklyn, N. Y.
Vozel, Luther F	Union Memorial Hosp., Balto., Md.
Waghelstein, Julius Meyer	Mercy Hospital, Balto., Md.
Warren, John McCullen	University Hospital, Balto., Md.
Wheless, James Block	City Memorial Hosp., Winston-Salem, N. C.
Williams, Jesse Frank, Jr	Maryland Gen. Hosp., Balto., Md.
Williamson, Charles Vernon	St. Agnes Hosp., Balto., Md.
Wilson, Norman James	University Hospital, Balto., Md.
Wode, Alvin Eugene Wm	South Balto. Gen. Hosp., Balto., Md.
Wood, Everet Hardenbergh	Maryland Gen. Hosp., Balto., Md.
Woodward, Lewis Klair, Jr	University Hospital, Balto., Md.

MATRICULATES

FOURTH YEAR CLASS 1935–36

Batalion, Abraham Louis	Maryland
Beers, Reid Lafeal, A.B	Utah
Bernstein, Milton, A.B	Maryland
Bieren, Roland Essig	Maryland
Booth, Harold Thomas, A.B	New York
Bowie, Harry Clay, B.S	Maryland
Bunn, James Harry, Jr., B.S.	North Carolina
Burka, Irving, B.S	District of Columbia
Burns, Harold Hubert	Pennsylvania
Burton, Jerome Kermit	Maryland
Bush, Joseph Edgar, A.B	Maryland
Chesson, Andrew Long	North Carolina
Coplin, George Joseph, B.S	New Jersey
Ctibor, Vladimir Frantisek, A.B.	New Jersey
Curtis, Leo Michael	Maryland
Davidson, Nachman, A.B	Maryland
Davis, George Howey, B.S	Maryland
Deehl, Seymour Ralph, B.S	New Jersey
Dittmar, Stuart Watt	Pennsylvania
Dixon, Darius McClelland, B.S	Maryland
Drozd, Joseph	Maryland
Feldman, Jerome	Maryland
Fissel, John Edward, Jr., B.S	Maryland
Fox, Lester Mitchell	Maryland
Franklin, Philip Lair	Maryland
Frich, Michael Garland	Pennsylvania
Gillis, Marion Howard, Jr	Maryland
Gimbel, Harry Solomon, A.B	Maryland
Glassner, Frank	Maryland
Gordner, Jesse Walter, Jr., B.S.	Pennsylvania
Greengold, David Bernard, A.B	Maryland
Gregory, Philip Orson	Maine
Greifinger, William, A.B	New Jersey
Grollman, Jaye Jacob	Maryland
*Herman, Daniel Loeb, A.B	Maryland
Isaacs, Benjamin Herbert, A.B	Maryland
Jones, Ceirianog Henry	Pennsylvania
Jones, Emory Ellsworth, Jr	West Virginia
Karfgin, Walter Esselman, B.S	Maryland
Karpel, Saul, B.S	New York
Katz, Joseph	Maryland
Kleiman, Norman, A.B	Maryland
Knobloch, Howard Thomas, B.S.	Pennsylvania
Kolodner, Louis Joseph	Maryland
Kroll, Louis Joseph, A.B	Maryland
Lipin, Raymond Joseph	Maryland
Lowman, Robert Morris	Maryland
Lund, Grant	Utah
Mansfield, William Kenneth	Pennsylvania
Maser, Louis Robert	Maryland
McCauley, Arthur Franklin, B.S.	Maryland
McKnew, Hector Caldwell, Jr	Maryland
McNinch, Eugene Robinson, B.S.	Pennsylvania
Moran, James Blessing, Ph.B.	Rhode Island

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* Deceased.

Moran, James Patrick, B.S.....New York
Moses, Benjamin Bernard......Maryland
Myerovitz, Joseph Robert......Maryland
Myers, William, B.S.........Pennsylvania
Nester, Hansford Dorsey, A.B., B.S. West Virginia
Nestor, Thomas Agnew, Ph.B. Rhode Island
Nicholson, Morris John, B.S....Maryland
Nowak, Sigmund Roman, B.S...Maryland
O'Brien, William Aloysius, Jr., A.B. New Jersey
Parr, William Andrew.........Maryland
Pembroke, Richard Heber, Jr., A.B. Maryland
Pentecoste, Salvador Dante, B.S. New Jersey
Pigman, Carl, B.S.............Kentucky
Reichel, Samuel Marvin, A.B....Maryland
Reynolds, John Henry, Jr....Pennsylvania
Rochlin, Gregory Narcisse .....Maryland
Roseman, Ralph Bernard, A.B. Pennsylvania
Rosenthal, Victor, B.S.........New York
Royster, James Dan, B.S...North Carolina
Schmieler, George Peter, B.S. Pennsylvania
Selby, George Durward, A.B....Maryland
Shimanek, Lawrence Joseph.....Maryland
Smith, William Carey.....North Carolina
Solomon, Cyril................Maryland
Sorin, Matthew..............New Jersey
Spain, David Michael.........New York
Squires, Millard Fillmore, Jr....Maryland
Stapen, Milton Honore, B.S....New York
Stecher, Joseph Louis..........Maryland
Steinberg, Samuel.............Maryland
Stern, Morris Harold, B.S.....New Jersey
Sunday, Stuart Dos Passos, A.B..Maryland
Terr, Isaac, B.S...............New York
Thomas, Anthony Joseph, Ph.B. Massachusetts
Tierney, Lawrence Matthew..Connecticut
Troutman, Baxter Suttles, B.S. North Carolina
Vieweg, George Louis, Jr....West Virginia
Waller, William Kennedy, A.B...Maryland
Wehner, Daniel George........Maryland
Weinstein, Jack Joseph.........Maryland
Wells, Gibson Jackson, A.B.....Maryland
Wilfson, Daniel, Jr., A.B.......Maryland
Wilkinson, Arthur Gilbart, A.B. Connecticut
Wolf, Nathan..................Maryland
Yavelow, Charles Sidney, A.B...New York
Zimring, Joseph George, B.S....New York

THIRD YEAR CLASS 1935–36

Abbott, Thomas Gilbert.......Maryland
Bank, R. Stanley, A.B.........Maryland
Barnett, Ernest, B.S...........New York
Bereston, Eugene Sydney, A.B...Maryland
Brill, Leonard.................Maryland
Burtnick, Lester Leon.........Maryland
Carlson, Carl Edwin.........Connecticut
Casanova, José Ramón.......Puerto Rico
Christensen, Roland Arnold..Pennsylvania
Cocimano, Joseph Michael District of Columbia
Cooney, Robert Francis.....Pennsylvania
Coughlan, Stuart Gray, B.S.....Maryland
Daily, Louis Eugene...........Maryland
D'Alessio, Charles Magno, B.S. Connecticut
D'Amico, Thomas Vincent, A.B. New Jersey
Davidson, Eli, B.S.............New York
Deradorian, Neshon Edward, B.S. Connecticut
Diggs, Everett Schnepfe, B.S....Maryland
Eisner, William Monroe, B.S....New York
Ellison, Emanuel Simon, B.S....Maryland
Ensor, Helen Robinson.........Maryland
Feldman, Philip Michael, B.S...New York
Finn, John Hannon, A.B...Massachusetts
Frenkil, James................Maryland
Frohman, Isaac...............Maryland
Gehlert, Sidney Richard, A.B...Maryland
Gillespie, John Lawrence, B.S..New Jersey
Goffin, Herbert, B.S...........New York
Goldberg, Sigmund............Maryland
Gordon, William Cecil, A.B.....New York
Gore, Robert Joseph, A.B.......Maryland
Gottdiener, Elvin Edward......Maryland
Greenwald, Frank, A.B.........New York
Hahn, Charles Solomon, B.S....New York
Hedrick, Grover Cleveland, Jr. West Virginia
Highstein, Benjamin...........Maryland
Hochfeld, Leo, B.S............New York
Hodgson, Eugene Welch.....Pennsylvania
Hoffman, Charles Wilbur, Jr....Maryland
Humphries, William Coolidge, A.B. Maryland
Insley, James Knox, Jr., A.B....Maryland
Jackson, Samuel, B.S..........New York
Jacobson, Isadore Alan, A.B....Maryland
Johnston, Clarence Frederick, Jr., A.B. Maryland
Jones, James Porter.......West Virginia
Kadan, James Earl, A.B.......Maryland
Kagen, Gordon Arthur, A.B..Pennsylvania
Kaltreider, D. Frank Olewiler, Jr., A.B. Pennsylvania
Kaplan, Isadore...............Maryland
Kaplan, Jack Allen, B.S........New York
Kaplan, Nathan, A.B..........Maryland
Katz, Albert Herbert, A.B......Maryland
Katz, Isadore, M.S. ....New York
Kemick, Irvin Bernard.........Maryland

Klemkowski, Irvin Philip, A.B. . . Maryland
Kolman, Lester Norman. . . . . . . Maryland
Kunkowski, Mitchell Frank, B.S. Maryland
*La Mar, David William. . . . . . . Maryland
Leskin, Louis Woron, B.S. . . . . . . New York
Levine, Leonard Warren, B.S. . Connecticut
Levinson, Leonard Jules, B.S. . . . New York
Linhardt, Elmer George. . . . . Maryland
Lisansky, Ephraim Theodore, A.B. Maryland
Long, William Broughton, Jr., B.S. Maryland
Lubinski, Chester James, A.B. . . Maryland
Mackowiak, Stephen Casimir. . . Maryland
Manieri, Frank Vincent, B.S. . . . Maryland
Marino, Irene Thelma, B.S. . . . . New York
Matheke, Otto George, Jr., B.S. New Jersey
Meyer, Milton Joseph, B.S. . . . . . New York
Muller, Stephen Edwin. . . . . Maryland
Muse, Joseph Ennalls, B.S. . . . . . Maryland
Myers, Philip, A.B. . . . . Maryland
Nataro, Maurice, B.S. . . . . New Jersey
Novey, Samuel. . . . . Maryland
Owens, Richard Spurgeon, Jr., B.S. Virginia
Pass, Isidore Earl. . . . . Maryland
Pavlatos, August Constantine, B.S. Pennsylvania
Perlman, Lawrence, B.S. . . . . . . New York
Piccolo, Pasquale Albert, B.S. . Connecticut
Pokrass, Frederick Phillip, A.B. Pennsylvania
Resnick, Elton. . . . . Maryland
Revell, Samuel Thompson Redgrave, Jr., B.S. . . . . Georgia
Rigdon, Henry Lewis. . . . . Maryland
Robins, Isadore Morris, A.B. . Pennsylvania
Robinson, Martin Herman, A.B. Pennsylvania
Rochkind, Reuben, A.B. . . . . . . Maryland
Roseman, Ephraim, A.B. . . . . Maryland
Rubin, Morris, A.B. . . . . Connecticut
Rudman, Gilbert Elmore, A.B. . . Maryland
Safran, Sidney. . . . . Maryland
Sakowski, John Paul. . . . . New Jersey
Sartorius, Norman Ellis, Jr., A.B. Maryland
Scarborough, Clarence Parke, A.B. Pennsylvania
Schmidt, Jacob Edward. . . . . Maryland
*Schmulovitz, Maurice Jacob, A.B. Maryland
Seegar, John King Beck Emory, Jr., A.B. Maryland
Seidel, Joshua, A.B. . . . . Maryland
Semoff, Milton C. F., B.S. . . . . . New York
Shapiro, Abraham, B.S. . . . . Maryland
Shear, Meyer Robert. . . . . Maryland
Spielman, Morton Marvin, B.S. . Maryland
Stapen, Mannie, B.S. . . . . New York
Statman, Bernhardt Joseph, B.S. New Jersey
Steiner, Albert. . . . . Maryland
Sullivan, Thomas John, B.S. . . New Jersey
Suwalsky, Sydney, B.S. . . . . . . Connecticut
Trupp, Mason, B.S. . . . . Maryland
Weems, George Jones, A.B. . . . . . Maryland
Weiss, Henry Wolf, B.S. . . . . New York
Whitworth, Frank Dixon. . . . . . . Maryland
Wilkin, Mabel Giddings, M.A. . . . . . Texas
Williams, Richard Jones, A.B. . . . Maryland
Williams, Robert Roderic, A.B. . New York
Wolff, Eldridge Henry. . . . . Maryland
Woodrow, Jack Henry, A.B. . . . . New York
Zacek, Frank Anthony. . . . . Massachusetts
Zeligman, Israel, A.B. . . . . Maryland

SECOND YEAR CLASS 1935–36

Abarbanel, Milton G., B.S. . . . New Jersey
Abramson, Daniel Jerome. . . . . . Maryland
Applefeld, Willard, B.S. . . . . Maryland
Baum, Max, A.B. . . . . Maryland
Bonner, Robert Alexander, Jr. . Connecticut
Borden, Melvin Nachlas, A.B. . . Maryland
Bowers, John Zimmerman, B.S. Maryland
Bradley, Stanley Edward, A.B. . . Maryland
Brooks, Wilbur Starr, A.B. . . . . New York
Brown, Manuel. . . . . Maryland
Bunting, John James. . . . . New Jersey
Callahan, Timothy Andrew, Jr. . . Maryland
Chance, Burton, Jr. . . . . Pennsylvania
Cohen, Hilliard . . . . Maryland
Colleran, Harold Leo, B.S. . . Pennsylvania
Coolahan, John Francis, B.S. . . . Maryland
Cooper, Donald Dwight, A.B. . . . Maryland
Costas, Jaime Luis. . . . . Puerto Rico
Cowherd, William Jerome. . . . . . Maryland
Crawford, Robert Clifford, A.B. . Maryland
Dausch, Michael Joseph. . . . . Maryland
Dodd, William Anthony. . . . . Maryland
Dolfman, Victor, M.S. . . . . Pennsylvania
Eichert, Arnold Herman. . . . . Maryland
Feder, Aaron. . . . . New York
Fox, Lester Irving, A.B. . . . . Massachusetts
Fox, Samuel Louis. . . . . Maryland
Gareis, Louis Calvin. . . . . Maryland
George, Joseph Mathias, Jr., A.B. Maryland
Gertman, Samuel, A.B. . . . . Maryland
Gibel, Harry. . . . . New York
Ginsberg, Milton, A.B. . . . . Maryland
Glassman, Edward Lewin. . . . . . Maryland

* Did not complete the year.

Goodman, Louis E., Jr., A.B....Maryland
Goodman, Sylvan Chauncey....Maryland
Gottdiener, Florence Hazel.....Maryland
Govons, Sidney Robert.........Maryland
Graff, Frederick Lewis, A.B..West Virginia
Guyton, William Lehman......Maryland
Haase, John Henry............Maryland
Harris, Sidney, A.B...........New Jersey
Hayleck, Mary Lodema, A.B....Maryland
Horky, John Ralph............Maryland
Januszeski, Francis Joseph......Maryland
Katz, Milton Aaron, A.B.......Maryland
Kelmenson, Harry.............Maryland
Knox, John Joseph, B.S.....Pennsylvania
Kotleroff, Jerome, B.S.........New York
Kump, Albert Barker.........New Jersey
Kurtz, Gerald Independence, A.B. New Jersey
Ladensky, Milton, A.B.........Maryland
Lauve, Celeste Constance......Maryland
Lenker, Luther Albert, B.S..Pennsylvania
Lipsitz, Morton Hirsch, B.S.....Maryland
Lopez, Hilton Luis..........Puerto Rico
Lumpkin, William Randolph....Maryland
Michaelson, Ernest............Maryland
Milholland, Arthur Vincent, A.B.Maryland
Miller, Clarence Lee............Missouri
Miller, Royston...............Maryland
Miniszek, James Haight........Maryland
Molofsky, Leonard Carl........Maryland
Palmer, David Waugh......West Virginia
Post, Laurence Caldwell, B.S. West Virginia
Powell, Geraldine Kennedy, A.B.Maryland
Rizzolo, John, B.S........... New Jersey
Roman, Paul, A.B.............Maryland
Rossello, Juan A.............Puerto Rico
Rothkopf, Henry, B.S.........New York
Sabatino, Bernard Joseph, A.B..Maryland
Sarajian, Aram Martyr, A.B...New Jersey
Schaefer, John Ferdinand.......Maryland
Schammel, Adam John.........Maryland
Schenthal, Joseph Edwin, A.B...Maryland
Scherlis, Sidney, A.B...........Maryland
Schlesinger, Robert Abraham...New York
Scott, John Matthai...........Maryland
Sevcik, Charles Vincent........Maryland
Sheppard, Robert Clay.........Maryland
Siegel, Edward, M.A...........New York
Silberman, Donald Jared, A.B...Alabama
Smith, John P., A.B...........Maryland
Sprei, Emanuel, M.S...........New York
Stein, Aaron, A.B..............Maryland
Steinberg, Morris William......Maryland
Swiss, Adam George...........Maryland
Thomas, Bernard Oscar, B.S....Maryland
Thompson, Winfield Lynn, B.S..Maryland
Twardowicz, Albin Harry, B.S...Maryland
Urlock, John Peter, Jr..........Maryland
Vollmer, Frederick Joseph, B.S..Maryland
Wagner, John Alfred, B.S.......Maryland
Warres, Herbert Leonard, B.S...New York
Welfeld, Alvan Abram, A.B.....Maryland
White, Harry Fletcher, Jr.......Maryland
White, Samuel Cottrell, B.S.,...Maryland
Winer, Albert Sidney, A.B......Maryland
Woodward, Theodore Englar, B.S. Maryland
Worthington, Richard Walker, Jr. Maryland
Wulwick, Michael, B.S.........New York
Yaffe, Kennard Levinson.......Maryland

FIRST YEAR CLASS 1935–36

Aaron, James Philip, Jr........Maryland
Abrahams, John James, Jr......Maryland
Algire, Glenn Horner, B.S......Maryland
Baile, John Ray, A.B..........Maryland
Baylus, Herman...............Maryland
Beck, Harry McBrine, A.B.....Maryland
Berman, Edgar Frank..........Maryland
Bernstein, Aaron..............Maryland
Bernstein, Albion Older, B.S...New York
Bess, Elizabeth Grant, A.B..West Virginia
Brezinski, Edward Joseph, A.B. New Jersey
Briele, Henry Alison...........Maryland
Brodsky, Bernard, A.B........New York
Cianos, James Nicholas, B.S....Maryland
Coffman, Robert Thornhill..West Virginia
Cohen, Frank Samuel..........Maryland
Conley, Carroll Lockard, A.B...Maryland
Corbitt, Richard Wylie.....West Virginia
Cunningham, Raymond Murray, A.B. Maryland
Evans, Virginia John, A.B......Maryland
Filtzer, David Leonard.........Maryland
Fine, Morton Norman, A.B.....Maryland
Fink, Francis Thomas..........Maryland
Fish, Eugene Arthur, A.B......Maryland
Freed, Arnold Ulysses..........Maryland
Fusting, William Hammond, B.S. Maryland
Gaver, Leo Junior.............Maryland
Goldberg, Nathan Zanvyl, A.B..Maryland
Goldberg, Raymond Bernard, A.B. Maryland
Goldberg, Sylvan David........Maryland
Grier, George Smith III........Delaware
Grott, Harold Allan............Maryland
Haimowitz, Samuel Isaac, A.B. Pennsylvania
Hartman, Oscar...............Maryland
Hartz, Alvin Sidney, A.B.......Maryland
Heimoff, Leonard Lincoln, A.B..New York
Hooker, Charles Bullard........Maryland
Hutchins, Thomas Manning....Maryland
Isaacson, Benjamin............Maryland
Jandorf, R. Donald, A.B.......Maryland
Jannarone, Lewis Henry......New Jersey

Jones, Charles Wilson, A.B.....Maryland
Kairys, David, A.B............Maryland
Kammer, William Henry, Jr., A.B. Maryland
Kappelman, Melvin Daniel.....Maryland
Keister, Philip Weyforth, A.B...Maryland
Kerr, James Patterson, Jr......Maryland
Kiely, James Arthur, A.B......New York
Kinnamon, Howard Franklin, Jr. Maryland
Kleiman, Bernard Stanley......Maryland
Kurland, Albert Alexander......Maryland
Kyle, Henry Hall..............Maryland
Lapinsky, Herbert, M.S........New York
Lavenstein, Arnold Fabian, A.B..Maryland
Layman, William Templeton....Maryland
Leitch, William Harvey........Maryland
*Levin, Bernard...............Maryland
Magness, Stephen Lee, A.B.....Maryland
Magruder, John Robinson, A.B..Maryland
Marks, Irving Lowell..........Maryland
McClafferty, William James, Jr., A.B. Rhode Island
McGinity, Francis Rowland....Maryland
McLaughlin, Francis Joseph....Maryland
Meyer, Alvin Francis..........New York
Miller, William Shepherd, A.B..Maryland
Minor, Michael Maurice....Pennsylvania
Moran, John Anthony.....Massachusetts

* Did not complete the year.

Nuttall, James Baker..........Maryland
Polek, Melvin Frank, B.S......Maryland
Reimann, Dexter LeRoy.......Maryland
Richter, Conrad Louis.........Maryland
Rochberg, Samuel, B.S....... New Jersey
Ruzicka, Edwin Russell........Maryland
Sadove, Max Samuel...........Maryland
Scher, Isadore.................Maryland
Sexton, Thomas Scott......West Virginia
Siegel, Maurice Bert...........New York
Smoak, Philip Laurens...........Florida
Solarz, Sylvan Daniel, A.B.....Maryland
Spiegel, Herbert............Pennsylvania
Steger, William Joseph, A.B. West Virginia
Stevens, Leland Bates, B.S.....Maryland
Stires, Carroll Chapin, A.B.....Maryland
Tartikoff, George, B.S.........New York
Taylor, William Wallace, B.S...Maryland
Thomas, Ramsay Berry, B.S....Maryland
Wallenstein, Leonard, A.B......Maryland
Wanner, Jesse Rosenberger, Jr..Maryland
Weisberg, Millard.............Maryland
Whitworth, Fuller Barnard.....Maryland
Wilder, Milton Jay............Maryland
Williams, Herman Joseph, B.S. Pennsylvania
Wilner, Sol, M.S..............New York
Wilson, Harry Thomas, Jr......Maryland
Zalis, Daniel Leonard..........Maryland

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To School of Medicine

I give, devise and bequeath to the Regents of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic..

(Here state amount or describe property)

To Endowment Fund

I give, devise and bequeath to the Trustees of the Endowment Fund of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Physic..

(Here state amount or describe property)

THE UNIVERSITY OF MARYLAND SCHOOL OF NURSING

The University of Maryland School for Nurses was established in the year 1889. Since that time it has been an integral part of the University of Maryland, coming under the same government. It is a non-sectarian school, the only religious services being morning prayers.

The University Hospital is a general hospital containing about 400 beds. It is equipped to give young women a thorough course of instruction and practice in all phases of nursing.

Programs Offered: The programs of study of the school are planned for two groups of students: (a) the five-year group, (b) the three-year group.

The requirements for admission to the five-year program of the School of Nursing are the same as for other colleges of the University. The completion of this course entitles the student to the degree of Bachelor of Science from the University of Maryland and to the diploma of the University Hospital School of Nursing.

The requirements for admission to the three year program are the satisfactory completion of an academic course in an approved high school. The completion of this course entitles the student to the diploma of the University of Maryland School of Nursing. Blank certificates will be furnished upon application to the Director of the School of Nursing.

MERCY HOSPITAL SCHOOL OF NURSING

The Mercy Hospital School of Nursing was established in 1899 and incorporated on December 23, 1901. It has developed the art of the profession according to the high standard necessary to qualify as a Registered Nurse.

The rapid growth of the institution, attested by the increasing number of its graduates, is evidence of the active part it takes in the health of the community. Through its connection with the Mercy Hospital its opportunities are unlimited. By its affiliation with the University of Maryland it has the advantage of the best professors for the instruction of the nurses.

The University of Maryland, in affiliation with the Mercy Hospital School of Nursing, offers a five year combined Academic and Nursing program. The completion of this course entitles the student to the degree of Bachelor of Science from the University of Maryland, and to the diploma of the Mercy Hospital School of Nursing. Graduate nurses who hold college degrees are greatly in demand, especially for positions in administration and teaching institutions. This program consequently offers a distinct advantage.

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